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PARENTS AND PEERS AS MODERATORS OF THE RELATION BETWEEN PEER
VICTIMIZATION AND THE DEVELOPMENT OF REVENGE GOALS IN MIDDLE
SCHOOL STUDENTS

A Dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University.

by

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Abstract

PARENTS AND PEERS AS MODERATORS OF THE RELATION BETWEEN PEER VICTIMIZATION AND THE DEVELOPMENT OF REVENGE GOALS IN MIDDLE SCHOOL STUDENTS

By Suzanne Camou Linkroum, M.S.

A Dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2009

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Professor, Department of Psychology

The majority of students experience peer victimization at least once during middle school. Existing research has established a strong link between exposure to peer victimization and poor psychosocial outcomes, including, but not limited to, maladaptive coping processes. Although little empirical attention has been devoted to examining how peer victimization impacts the development of social goals, the few existing studies have shown a positive relation between peer victimization and revenge goals. To further advance this research, several concurrent and longitudinal models delineating the relations among peer victimization, physical aggression, parental attitudes toward aggression, peer deviance, and revenge goals were examined in a sample of 5,068 sixth graders in the fall and spring of the academic year. It was hypothesized that the relation

between overt victimization and revenge goals would be moderated by: a) physical aggression, b) parental support of aggression, and c) peer deviancy, such that the relation would strengthen as levels of each moderator increased. Hierarchical linear regression models found significant, positive main effects for overt victimization, physical aggression, parental support for aggression, and peer deviancy on revenge goals both concurrently and over time. These effects did not differ by gender. Results indicated that the relation between overt victimization and revenge goals was strongest for students with low to moderate levels of physical aggression, whereas victimization was inversely related to revenge goals for highly aggressive students. In addition, overt victimization was positively related to revenge goals for students with low to moderate numbers of deviant peers, but this relation was no longer significant for students at the highest quartile of peer deviancy. These results have important implications regarding the inclusion of traditionally “low risk” students in violence prevention programs, and also highlight the importance of intervening at the individual, parent, and peer level.

INTRODUCTION

Peer victimization involves experiencing different forms of aggression, including physical aggression, verbal harassment, and relational aggression, which includes social ostracism and intentional harm to relationships. (Crick & Bigbee, 1998; Crick & Grotpeter, 1995; Olweus, 1993). Peer victimization is a serious problem that affects 10% to 24% of youth on a chronic basis (Olweus, 1993; Pelligrini et al., 1999, Schwartz et al., 1993; 1998), and approximately 75% of youth less frequently (Farrell et al., 2006; Hoover, Oliver, & Hazler, 1992). In general, research has shown that girls experience more frequently experience relational victimization than physical victimization, whereas boys are more likely to experience both physical and relational victimization (Crick & Bigbee, 1998). Regardless of gender, youth have consistently identified peer victimization as a common and salient stressor (Farrell, Ampy, & Meyer, 1998; Farrell et al., 2005; Mosley & Lex, 1990) that is difficult to handle (Farrell et al., 2006).

Several studies have demonstrated that children who experience peer victimization have higher levels of psychological maladjustment, including symptoms of depression, anxiety, loneliness, low peer status, and aggression (Crick, Casas, & Ku, 1999; Graham, Bellmore, & Juvonen, 2003; Hanish & Guerra, 2002; Prinstein et al., 2001). A small subgroup of children, referred to as “bully/victims,” “provocative-victims,” “ineffectual aggressors,” or “aggressive-victims” in the literature (Schwartz et al., 2001), exhibit even higher levels of psychosocial maladjustment than more passive victims (Haynie et al., 2001). Bully/victims have higher levels of externalizing behaviors,

such as aggression, distractibility, and poor impulse control, and experience poor social relationships with their peers (Schwartz et al., 2001).

Within the last 15 years, researchers have begun to examine how youth cope with peer victimization. Many conceptual models have been presented in the psychological and developmental literature in an effort to understand how youth cope with stressors. Although there is some debate whether coping is a purely conscious process or if it also includes elements of the unconscious (for review, see Compass et al., 2001), researchers generally agree that coping is a dynamic process that involves managing cognitive, emotional, and behavioral needs in situations that are perceived as threatening or stressful (Compass et al., 2001; Lazarus & Folkman, 1984; Roth & Cohen, 1986). There is evidence that victimized youth differ in the way they cope with peer conflict in comparison with non-victims. Victimized children are more likely to use avoidant strategies (Phelps, 2001), cry, run away, or ask an adult for help (Smith, Shu, & Madsen, 2001) in comparison to non-victims.

Lazarus and Folkman (1984) emphasized the role that social goals play in the coping process. Social goals represent the motivating factors driving human behavior. In other words, social goals relate to why individuals choose a certain response over others. A number of social goals that drive youth behavior have been identified in the literature. Ojanen et al. (2005) developed a scale to examine agenic (e.g., oriented towards gaining personal agency) and communal (e.g., promoting affiliation with others) interpersonal goals. Examples of agenic goals assessed by their measure included gaining respect from others, stating one's opinion, and getting others to go along with your idea. Examples of

communal goals included feeling close to others, being accepted by others, keeping others from getting angry at self, and preventing social embarrassment. Other examples of social goals that have been identified in the literature include revenge (Lochman et al., 1993; Ray, Kliever et al. 2006; Rose & Asher 1999; Troop-Gordon and Asher 2005), self-improvement (Chen et al., 2002), social acceptance (Chen et al., 2002; Ray et al. 2006), self-defensiveness (Chen et al., 2002; Ray et al., 2006; Rose & Asher, 1999), and fairness (Ray et al., 2006; Rose & Asher 1999). Studies have shown that girls are more likely to prioritize goals that will maintain their social relationships, whereas boys are more likely to prioritize revenge goals, or other goals that will promote their social control and dominance (Rose & Asher, 1999).

Social goals are important because they have been linked consistently with behavioral strategies (Erdley & Asher, 1999; Lochman et al., 1993; Ojanen et al., 2005; Rose & Asher 1999; Salmivalli et al., 2005; Troop-Gordon & Asher 2005). Crick and Dodge (1994) theorized that as children process social information, the identification or modification of social goals is an important precursor to their enactment of a behavioral strategy. Empirical evidence supports the notion that social goals influence the way that youth respond to peer conflict. In a study conducted with students in the fourth and fifth grades, Rose and Asher (1999) found that prosocial goals (e.g., maintaining interpersonal relationships) were positively associated with prosocial strategies (e.g., accommodation or compromise), and negatively associated with responses that prioritized self-interest, verbal aggression, or terminating the relationship. Similarly, Chung and Asher (1996) found that prioritizing maintaining a relationship with the other person involved in the

conflict was associated with prosocial behavior, whereas prioritizing maintaining control was associated with hostile and coercive strategies. Lochman and colleagues (1993) found that boys who valued revenge and dominance goals highly but did not value affiliation were more likely to report having assaulted someone, and using marijuana, alcohol, or other illicit drugs.

Little is known about how exposure to peer victimization influences the development of social goals. However, existing literature suggests that victimized youth differ in the way that they process social information, and exhibit deficits in social problem solving skills that lead to psychosocial maladjustment or the use of ineffective strategies to deal with interpersonal conflict (Camodeca et al., 2003; Gouze et al., 1987; Sanders, 2004; Schwartz et al., 1998). It is possible that repeated experiences of peer victimization over time lead to the development of maladaptive social goals, which may in turn lead to the use of more maladaptive coping strategies. Because social goals have received less empirical attention than other steps in the coping process (Ray et al., 2006), there is limited empirical evidence examining this hypothesis (Mah, 2001). However, existing studies have indicated a positive association between peer victimization and revenge goals (Coleman & Byrd, 2003; Kochenderfer-Ladd, 2004; Mah, 2001).

Another interesting question that has not been adequately addressed in the psychological literature relates to how social goals develop. Of particular interest are the factors that relate to the development of revenge goals, as previous studies have demonstrated that revenge has the strongest relation with behavioral strategies when compared with other social goals (Rose & Asher, 1999; Kliewer et al., 2006). Further,

revenge goals have been linked with psychosocial maladjustment (Lochman et al., 1993; Kliewer et al., 2006), and in one study accounted for as much as 15% of the variance associated with delinquency (Kliewer et al., 2006). Hence, understanding factors that lead to the development of revenge goals is an important developmental and clinical question that has not received ample empirical attention.

A plethora of research has highlighted the importance of parental and peer factors in adolescent development. According to ecological systems theory (Bronfenbrenner, 1986), interactions within the parent-child and peer-child domain are paramount in their influence on social functioning. Children are socialized to think and act in certain ways based on observations or actual experiences with important people in their lives (Bandura, 1977). According to social learning theory (Bandura, 1977), as children interact with their parents and peers, they are either rewarded or punished for their social behavior, and will base decisions about future behavior on these socializing experiences. It follows that parents and peers probably transmit their attitudes about effective and appropriate ways to cope with conflict as social interactions unfold. Unfortunately, no studies were identified that examined the effects of parent and peer characteristics on social goals in victimized youth. There is evidence to suggest that parental attitudes toward aggression play an important role in the display of aggressive behavior, and that this aspect of parenting is more important than the quality of the parent-child relationship and parental monitoring (Orpinas et al., 1999). An observational study demonstrated that mothers transmit their attitudes toward coping with victimization to their daughters

(Macbrayer et al., 2003). However, the effects of parental attitudes toward aggression on the relation between peer victimization and revenge goals have not been studied.

Peers are particularly salient socializing agents for middle school children (Holmbeck, 1994) and can influence the development of both positive and negative behavior. Existing research has demonstrated a robust link between involvement with deviant peers and problem behavior (for review, see Dishion et al., 2005). Dishion and colleagues have suggested that this relation can be explained by a “deviancy training” process, through which youth are rewarded through nods, laughs, and other cues of approval for attitudes, comments, and behaviors that are against authority (Dishion et al., 1996; 1997). Cohen and Prinstein (2006) demonstrated the internalization of attitudes supporting aggression from a perceived “popular student” to peers who did not previously favor aggression. Unfortunately, the effects of associating with deviant peers on the coping processes of victimized youth have not been examined. However, victims of peer aggression are more likely to associate with deviant peers when compared to non-victims, underscoring the importance of studying this phenomenon. The proposed study will further our understanding of peer influences on social coping by investigating the moderating effects of deviant peers on the development of revenge goals in victimized youth.

In sum, peer victimization is a serious and prevalent problem for youth that leads to poor psychosocial adjustment and maladaptive coping strategies (Causey & Dubow, 1992; Crick & Grotpeter, 1995; Egan & Perry, 1998; Kochenderfer-Ladd & Skinner, 2002; Phelps, 2001; Prinstein, Boergers, & Spirito, 2001; Vernberg et al., 1995).

Research guided by the social learning and social information processing theories have found that victimized youth cope with peer problems differently than their non-victimized peers (Phelps, 2001; Smith, Shu, & Madsen, 2001). For instance, victims of peer aggression attend to different cues in their environment, generate either fewer or less effective alternatives, and engage in more avoidant behaviors as they cope with social problems. Although identifying social goals is an important step in the coping process (Crick & Dodge, 1994; Lazarus & Folkman, 1984), knowledge related to the social goals prioritized by victimized youth is limited. However, existing literature points to a robust link between social goals and the selection of strategies to deal with interpersonal conflict (Chung & Asher, 1996; Erdley & Asher, 1999; Lochman et al., 1993; Rose & Asher, 1999). Given the strong relation between revenge goals and maladjustment (Lochman, 1993; Kliewer et al., 2006; Rose & Asher, 1999), determining factors that contribute to revenge is of particular interest. This study attempts to address these gaps in the literature by conducting a longitudinal analysis of the relation between peer victimization and the development of social goals in middle school students. It will examine whether the strength of the relation between peer victimization and revenge goals differs by gender. The study aims to use a prospective design to examine the effects of exposure to peer victimization during the sixth grade year on the development of revenge goals, and to identify parent, peer, and individual factors that moderate the effect.

REVIEW OF THE LITERATURE

In this section, the literature examining the role of peer victimization, coping, parental factors, and peer deviance in the development of revenge goals is reviewed. First, a definition of peer victimization, followed by the prevalence and consequences of peer victimization are discussed. A theory of youth coping and its application to coping with peer victimization is then reviewed. Next, literature pertaining to the role of social goals in coping is summarized. This section will include literature that demonstrates the influence of gender on social goals. This is followed by a discussion of factors that influence the development of revenge goals, with particular attention given to the role of parents and peers in the socialization process. Finally, methodological limitations of existing studies are discussed.

Peer Victimization

Peer victimization involves being the recipient of one or more forms of aggression, including physical harm (e.g., being hit, kicked, shoved), verbal harassment (e.g., being teased, taunted, talked about), and relational victimization (e.g., being excluded from social groups, ostracized, having rumors spread about self). Empirical evidence supports the notion that these types of peer aggression are distinct constructs. For instance, Perry and colleagues (1988) concluded that physical and verbal forms of aggression are orthogonal. In their cross-sectional study, a predominantly Caucasian, middle-class sample of children in the third through sixth grades was rated by their peers on a variety of different characteristics (e.g. kids make fun of him/her, he/she gets beat up, he/she hits and pushes other people around). A three-way analysis of variance found

that verbal and physical forms of peer victimization are distinct constructs. Whereas victimization through physical means decreases with age, the incidence of verbal harassment remains consistent throughout early and late childhood. In another study, Kochenderfer and Ladd (1996) identified four distinct types of victimization in a sample of predominantly Caucasian kindergarteners: general (i.e., picked on), direct-physical (i.e., hit), direct-verbal (i.e., being told mean things about you to your face) and indirect-verbal (i.e., had bad things said about you to classmates). Similarly, Crick, Bigbee, and Howes (1996) found that children consider relational victimization a separate construct from verbal or physical aggression. In their study, a sample of 9- to 12-year olds was asked open-ended questions about anger. Children reported that relational aggression, verbal aggression, and physical aggression are all forms of intentionally harmful behaviors experienced in childhood. Their sample reported that girls were likely to use relational aggression and verbal insults to harm their peers, and boys were more likely to engage in physical aggression or verbal insults.

A large body of work has shown that peer victimization is a common and serious problem for children and adolescents that is difficult to handle (Farrell et al., 2006). As many as 10% to 24% of children are chronically victimized by their peers (Olweus, 1993; Nansel et al, 2001; Pellegrini et al., 1999; Schwartz et al., 1993; 1998). Even more children experience peer victimization less frequently; between 24% and 46% of youth report having at least one experience of peer victimization in the past year (Haynie et al., 2001; Nansel et al., 2001). Schwartz and colleagues (1993) demonstrated that peer victimization occurs in contrived social groups as well, among children with no previous

knowledge of one another. Youth were randomly assigned to play groups consisting of 8 to 10 children. Their social interactions were coded for levels of aggression and victimization. Ten percent of the children were socially excluded from the group and were the recipients of peer aggression (Schwartz et al., 1993).

Researchers have suggested that boys and girls experience different forms of peer victimization. In one such study, Crick and Bigbee (1998) classified participants as non-victims, relational victims, overt victims, or relational and overt victims if they were in the top quartile for a specific victimization category, as determined by peer- and self-report. Boys were most likely to be targets of both relational and overt aggression (12%), followed by overt aggression (9%), then relational aggression (4%). Girls were most frequently the targets of relational aggression (12%), followed by relational and overt aggression (4%), and then overt aggression (1%).

Research has established a robust link between experiences of peer victimization and internalizing and/or externalizing problems, including loneliness, depression, and social avoidance (Prinstein et al., 2001), low peer status (Crick, Casas, & Ku, 1999), and aggressive behavior (Prinstein et al., 2001). Most studies examining outcomes of victimized youth have linked peer victimization with internalizing problems. For example, Boulton and Underwood (1992) administered a survey to English children aged 8 to 12 attending urban schools. The authors found that youth who reported being victimized “sometimes” or “several times a week” had a constellation of stressors that was not apparent in non-victims. For instance, victimized children were less likely to report being happy during playtime, and were more likely to report loneliness at school,

being alone during playtime, and having fewer friends when compared to non-victims. In another study, Prinstein and colleagues (2001) examined the individual and combined effects of overt and relational victimization on adjustment in an ethnically diverse sample of high school students living in a small city. They found that for all adolescents, regardless of sex, targets of both overt and relational aggression reported higher levels of depression, loneliness, and externalizing problems than adolescents who were the target of only overt aggression or relational aggression. Those who were the target of one form of peer aggression were, in turn, more likely to report depression, loneliness, and externalizing behaviors than children who were not victimized.

Similar findings were reported for minority youth experiencing peer victimization. Graham, Bellmore and Juvonen (2003) found that victims of peer aggression, identified through self-report and peer nomination, had lower levels of self-esteem, and higher levels of social anxiety, depression, and somatic complaints as measured by self-and teacher-report. Similarly, in their large-scale, prospective study of Latino and African-American elementary school children, Hanish and Guerra (2002) found that previous victimization was correlated with internalizing, externalizing, and social problems two years later.

Although victims of peer aggression have traditionally been viewed as meek, avoidant, and socially timid (Olweus, 1993), recent attention has been drawn to a small subgroup of victimized youth who also exhibit higher levels of externalizing behaviors, such as aggression, distractibility, and poor impulse control (Haynie et al., 2001; Kumpulainen et al., 1998; Schwartz, et al., 2001). This subgroup of victims has been

referred to as “aggressive-victims,” “ineffectual aggressors,” “bully/victims,” and “provocative-victims” in the literature (for review see Schwartz et al., 2001). Some studies of aggressive victims have focused on the association between victimization and externalizing behaviors. For example, Schwartz and colleagues (1998) found that the level of peer-nominated victimization at age eight or nine was predictive of teacher- and mother-reported social problems and externalizing difficulties two years later. Victims were defined as youth who were picked on, teased, and hit or pushed. Unfortunately, this study did not include relational victimization, which is a common form of aggression used by girls (Crick & Bigbee, 1998). Nevertheless, victimization at age eight or nine predicted later levels of externalizing behaviors even after normative increases in aggressive behavior were taken into account. This study found weak and inconsistent gender moderating effects, suggesting that victimization can lead to increases in aggression for both boys and girls.

The link between peer victimization and aggression has been demonstrated in other studies as well. Durant, Pendergrast, and Cadenhead (1994) conducted a survey-based study with a sample of low-income African-American adolescents that found that exposure to victimization was predictive of engagement in physical fights. Results of this cross-sectional, self-report study indicated that exposure to violence and victimization accounted for 8% of the variance in the frequency of fighting. In another study, Graham and Juvonen (2002) found that African-American males who had been identified by their peers as victims had the highest levels of teacher-rated aggression within a sample of Latino and African-American middle school students. In a cross-sectional, survey-based

study, a primarily Caucasian sample of students in the seventh through ninth grades reported the extent to which they were the recipients of peer victimization and their engagement in overt and relational aggression (Vernberg et al., 1995). A strong association between being the recipient of peer victimization and aggressive behavior emerged, even for children who did not endorse aggression as legitimate and acceptable. Similarly, in a sample of middle class preschool-aged children, Crick, Casas, and Ku (1999) found that many victimized children, as identified by teacher report, were also rated by their teacher as aggressive, with 41% of overtly victimized children, and 19% of relationally victimized children rated as aggressive.

Aggressive-victims exhibit higher levels of maladjustment than internalizing victims and non-victims. Haynie and colleagues (2001) sampled a diverse group of public middle school students and assessed several different psychosocial variables (e.g., bullying, victimization, self-control, misconduct, association with deviant peers, school adjustment, depression) through self-report measures. Participants were classified as victims, bullies, bully/victims, or non-victims. They found that bully/victims had the least favorable score on all psychosocial measures, accentuating the severity of their maladjustment. Kupersmidt and Patterson (1991) found similar results in a sample of second through fourth grade students. They found that bully/victims, identified through peer-report, had higher levels of teacher-reported hyperactivity, disruptiveness, and attention-seeking behavior than passive-victims and non-victims. In addition, bully/victims experienced greater levels of social exclusion than their passive-victim and bully counterparts. Perry, Kusel, and Perry (1988) found that victimization and

aggression have unique variance associated with the prediction of peer acceptance, and that aggressive-victims, or those with high ratings of both victimization and aggression have lower social preference scores than passive-victims or bullies.

In conclusion, the majority of youth experience at least one instance of peer victimization each year, and as many as a quarter of all children are physically, verbally, or socially harassed by their peers on a weekly basis (Haynie et al., 2001; Olweus, 1993; Nansel et al, 2001; Pellegrini et al., 1999; Schwartz et al., 1993; 1998). Empirical evidence has consistently linked peer victimization with maladaptive outcomes, including internalizing and externalizing problems. Peer victimization has been a frequent area of inquiry over the past 15 years, with most studies examining the psychosocial sequelae of victimization. Several studies have emphasized depression, social avoidance, loneliness and school failure as outcome variables. However, recent studies have identified that for a subgroup of children, peer victimization is linked with externalizing problems, including aggression and impulsivity, and these aggressive-victims exhibit the highest level of maladjustment (Kupersmidt & Patterson, 1991). Some children who are victimized are not affected socially, emotionally, or academically (Hoover, Oliver, & Hazler, 1992). An important future direction in the peer victimization literature is examining underlying cognitive and coping processes that are activated during peer victimization that may affect youth adjustment.

Coping Process and Victimization

Adolescent Coping Theory

The examination of how children and adolescents cope with stress has gained considerable empirical attention in recent years (Compas, Connor, Saltzman, Thomsen, & Wadsworth, 1999; 2001). Coping can be conceptualized as cognitive and behavioral processes to manage internal or external demands that are perceived as stressful by the individual (Compas et al., 2001; Lazarus & Folkman, 1984; Lazarus, 2000). Much of the current theory and research on adolescent coping behavior has been guided by Lazarus and Folkman's (1984) model that was developed as a way to understand stress and coping in adults (Compas et al., 1999).

According to Lazarus and Folkman's model, coping is an intentional, dynamic process that involves cognitive and behavioral management of situations that are perceived as threatening or stressful; coping efforts change as appraisals of the situation change. Appraisals are an integral concept in their model, and occur at the onset of the coping process. Primary appraisals determine the relevance of an event to the individual, and the extent to which the event is perceived as benign or threatening. Secondary appraisals involve efforts to manage the self within the event, such as the generation of different coping options, evaluating whether a specific coping option will accomplish a desired goal, and determining whether a specific coping option could be executed efficaciously. Emotion is an implicit component of their model, and is embedded in the coping process (Lazarus & Folkman, 1984). Emotion drives aspects of the appraisal process, just as the appraisal process influences emotional valence and regulation

(Lazarus, 1993; 2000). Hence, coping involves managing both the emotional reactions associated with the event, and controlling or changing environmental factors associated with the stressor. Examples of emotion-focused coping strategies include minimizing the importance of the stressor, or distracting oneself from thinking about the problem. Problem-focused strategies involve efforts to change the intensity of the stressor, such as asking for help, or generating ideas to deal with the problem.

In general, research with adolescent samples has shown that youth who rely on emotion-focused coping techniques have higher levels of maladjustment when compared to their peers who engage in problem-focused coping (Causey & Dubow, 1992; Compas et al., 1999; Compas et al., 2001; Tolan, Gorman-Smith, Henry, Chung, & Hunt, 2002). Tolan et al. (2002) demonstrated in a sample of inner-city adolescents that children who prioritized coping with their emotional reactivity in response to stress were more likely to exhibit externalizing problems in relation to their peers who focused on different coping goals. However, Compas and his colleagues (1999; 2001) indicated that dichotomizing coping efforts as either emotion-focused or problem-focused, and favoring problem-focused techniques is overly-simplistic and does not accurately reflect important differences in the functions of coping behaviors that are embedded into these broad categories. They explained that cognitive avoidance, thought suppression, meditation, and seeking emotional support would all be enveloped under *emotion-focused coping*, despite the differences in their functions and effects on emotion regulation (Compas et al., 1999). Further, these dimensions of coping do not adequately reflect the coping goals of the individual, in part due to methodological limitations of how coping strategies are

classified (Compas et al., 1999; 2001). In fact, the use of emotion-focused strategies increases as adolescents develop more complex cognitive skills, whereas the use of problem-focused coping remains relatively stable throughout childhood and adolescence (Compas et al., 2001). Hence, effectiveness of coping should be viewed as the ability to juggle emotion- and problem- focused techniques as either appraisals regarding the stressor, or external environmental demands change throughout the coping process (Compas et al., 2001; Lazarus & Folkman, 1984).

Additional dimensions have been proposed for classifying responses, though research has not yet examined the relations between these dimensions (Compas et al., 2001). One such dimension is the distinction between responses that are activated to regain primary or secondary control of the situation (e.g., Weisz, McCabe, & Dennig, 1994). Primary control is achieved through modifying environmental conditions to meet individual needs, whereas secondary control requires adjusting oneself to accommodate the conditions of the external environment. Thurber and Weisz (1997) added relinquished control to this model, referring to the point at which the individual gives up control of the situation. In general, studies have suggested that using secondary control techniques (e.g., emotion-focused coping) are more adaptive for coping with stressors that are largely uncontrollable and primary control techniques are more adaptive in controllable situations (Weisz et al., 1994). It is important to remember, however, that coping is a complex process, such that youth probably “mix” their use of primary and secondary control coping methods, and the ability to customize the coping approach or use different techniques simultaneously is optimal (Berg & Calderone, 1994; Weisz et al., 1994).

Some youth, particularly those who are frequently victimized, or those who attribute hostile intent to their assailants, may perceive low controllability in events involving victimization, which may impact their coping goals and priorities.

Another influential dimension of coping, developed by Roth and Cohen (1986), distinguished between approach-type and avoidant-type coping processes. In this model, approach-type coping is action-oriented activity intended to minimize or eliminate the stressor. Examples of approach-type coping include problem-solving (e.g., making changes that will make the situation better), and seeking social support (e.g., asking a peer or adult for advice) because these strategies involve cognitively and behaviorally confronting the stressor (Fields & Prinz, 1997; Roth & Cohen, 1986). Avoidance-type coping involves cognitive and behavioral strategies that are oriented away from the stressor (Roth & Cohen, 1986). Instead of attempting to reduce or eliminate the existence of the stressor, avoidant coping behaviors deal with emotional and cognitive reactions associated with the stressor. Examples include cognitive distancing (e.g., refusing to think about the incident), internalizing (e.g., self-blame and rumination), and externalizing (e.g., getting mad and hitting someone) (Causey & Dubow, 1992). Children use a combination of approach and avoidant coping strategies when dealing with stress (Phelps, 2001), though approach strategies are associated with more positive adjustment and greater effectiveness (Fields & Prinz, 1997).

Extant literature has demonstrated that in general, victimized youth cope with stress differently than their non-victimized peers. For example, Phelps (2001) found that children in the top quartile for peer victimization were more likely to report using

internalizing strategies, and less likely to report using problem-solving strategies, in comparison to their peers who had experienced fewer incidents of peer aggression. Smith, Shu, and Madsen (2001) found that children who were frequently victimized “several times a week” were more likely to run away, cry, or ask a friend or adult for help than youth who were victimized less frequently. The latter were more likely to be assertive and ask the bully to stop, or ignore the bully. Kochenderfer and Ladd (1996) found that elementary school-aged boys who responded to victimization with aggression in the Fall semester were more likely to continue to be victimized throughout the Spring than were boys who responded by getting help from friends. Taken together, these studies indicate that exposure to chronic victimization affects the types of strategies that adolescents use to cope with peer problems.

Social Information Processing

As discussed previously, Lazarus and Folkman (1984) emphasized the role of primary and secondary appraisals in their model of stress and coping. Crick and Dodge’s social information processing model (1994) is particularly useful for considering the cognitive processes involved in the secondary appraisals that occur when the stressful encounter is social in nature. This model posits that social information processing occurs in six steps: (a) the encoding of external and internal cues, (b) interpretation and mental representation of these cues, (c) selection or modification of a goal, (d) generation of possible responses based either on previous responses or novel responses, (e) selection of a response, and (f) initiation of the behavior. Children selectively attend to particular cues and external and internal events, and only the cues that are attended to are encoded and

interpreted. The selection of cues that are attended to and subsequently interpreted is made by a series of independent processes, such as memories of previous social exchanges with the other person involved in the event, self-evaluation and peer-evaluation, and perspective taking (Crick and Dodge, 1994). Researchers have argued that bullies, victims, and aggressive-victims exhibit deficits or biases at one or more of the six stages (Sanders, 2004). Problem-solving is an essential component of coping. Hence, deficits in one or more of these stages will greatly influence cognitive and behavioral aspects of coping, and will impact an adolescents' decisions to cope in a prosocial, aggressive, or avoidant way.

Gouze (1987) found that aggressive preschool students exhibited biases in the first and fourth steps of the social information processing model, which involve encoding social cues, and generating solutions. Their predominantly Caucasian sample consisted of male kindergarten students whose parents were either working or middle class. The researchers presented their participants with hypothetical interpersonal problem situations (e.g., Boy B has a ball that Boy A wants. What should Boy A do?). Responses were coded for their content, as well as the number of solutions that were generated. In addition, each participant completed two attentional tasks that measured the child's ability to shift away from aggressive cues, and their tendency to be distracted by aggressive versus non-aggressive stimuli. Finally, teachers rated each participant on psychosocial adjustment, including aggression. The results indicated that aggressive boys were less willing to shift their attention away from aggressive stimuli (e.g., a cartoon clip containing violence), and were more distracted by aggressive cartoons when compared

with their non-aggressive counterparts. This demonstrates a bias in the first step of the social information processing model, suggesting that some children are more attune to aggressive cues than are others. The authors also found that aggressive boys generated more solutions than their non-aggressive peers, but these solutions were more aggressive and less efficient. This finding conflicted with a previous study in which aggressive boys generated fewer alternatives to hypothetical peer problems (Richard & Dodge, 1982). Nevertheless, findings from both studies point to variability in the generation of solutions to hypothetical peer problems, and these differences may relate to the tendency to respond aggressively.

Camodeca and colleagues (2003) found that bully-victims exhibit deficits in clarifying and interpreting social information, and response selection. In their longitudinal study, third and fourth grade students from the Netherlands were assessed at two time points during the academic year. *Bully, victim, bully/victim, or not involved* status was assessed by peer nomination at both time points. Additionally, social information processing was measured by providing participants with hypothetical situations involving peer problems. During the first assessment phase, students were asked to provide solutions to the hypothetical problems. Emotions and attributions of intent were assessed during the second phase. During both time points, participants were asked to imagine themselves as the victim in each of the hypothetical situations. Solutions from the first phase of data were coded, and five categories of coping responses emerged: (a) aggression, (b) assertiveness, (c) asking for help from teachers or peers, (d) avoidance, and (e) irrelevance (e.g., the response did not fit the question or make sense).

Their results indicated that bully/victims attributed more blame to the perpetrator, and became angrier with them as well. Further, members of the bully/victim group were more likely than members of the other groups to retaliate, demonstrating a deficit in the fifth step of the model. Contrary to their hypothesis, victimized youth were not different from their non-victimized peers in terms of attributing hostile intent. The authors suggested that this may be explained by the tendency for victims to self-blame rather than attribute the problem to the perpetrator. Finally, stable bullies (e.g., those who were identified by their peers as bullies at both assessment points) generated the greatest number of irrelevant solutions when compared to their unstable counterparts, suggesting that this group of children have deficits in the ability to generate effective solutions.

Similar studies have found that aggressive youth are more likely to attribute hostile intent to the other person involved in an interpersonal situation, even when the intent is ambiguous, such as being bumped in the school hallway (Crick & Dodge, 1994). Hostile attribution bias is evident in children who are victimized by their peers. Schwartz and colleagues (1998) observed several play groups consisting of 6 African-American boys in the third grade. Each participant was rated for his or her level of victimization, proactive aggression, reactive aggression, and assertive behavior. In addition to observational data, social-cognitive interviews were conducted to assess social information processing skill. Results indicated that victimization was positively correlated with a tendency to attribute hostile intentions even in neutral situations, and also associated with reactive aggression. Researchers speculated that problems with attributional biases may lead to deficits and distortions in cognitive processes later in the

model, such as generating alternatives, identifying goals, perceiving how others feel, and predicting the results of one's actions on others (Crick & Dodge, 1994).

In addition to deficits in the interpretation of intent attributions of others (e.g., hostile attribution bias), Prinstein and colleagues (2005) demonstrated that some youth may exhibit biased self-referent attributions. For instance, some children have the propensity to attribute fault to themselves when experiencing a negative social event (e.g., I was excluded from the party because I am not any fun). The authors assessed hostile intent attributions, critical self-referent interpretations, peer status, and psycho-social functioning in a predominantly Caucasian sample of kindergarten students. The first two constructs were assessed using hypothetical situations with illustrations that were administered verbally to the participants. Peer status was assessed by peer nominations, in which peers identified classmates who were well-liked, disliked, happy, sad, victimized, and withdrawn. Finally, psycho-social functioning was measured through teacher report. The authors found that children's tendency to make critical self-referent attributions from ambiguous peer experiences was associated with negative peer experiences, such as social rejection or victimization. Results also found that negative interpretations about the self were related to engagement in maladaptive social behaviors that may perpetuate social rejection and victimization.

The propensity to assign self-blame during negative peer interactions may influence social goals and social behavior (Rubin & Rose-Krasnor, 1992), and may also influence coping style. Quiggle and colleagues (1992) found that children who attribute social failure to their own inadequacies are socially withdrawn and passive, and may be

less proactive in their coping choices. Additional studies have demonstrated an association between critical self-referent attributions and internalizing symptoms, such as depression, anxiety, and withdrawal (Prinstein et al., 2005; Suarez & Bell-Dolan, 2001). Hence, the propensity to self-blame may inhibit participants from engaging in prosocial coping processes, and may perpetuate the use of avoidant or internalizing responses. This process may be particularly relevant to victims of peer aggression, in light of the robust relation between peer victimization and internalization of stress.

In conclusion, extant coping literature has been guided by Lazarus and Folkman's (1984) conceptualization of coping, which emphasizes the interconnected roles of cognitive appraisals, emotion, goals, and behavior throughout the coping process. Some researchers have found that chronic victims of peer aggression cope with victimization differently than their less frequently victimized peers (e.g., Kochenderfer & Ladd, 1996; Phelps, 2001; Smith, Shu, & Madsen, 2001). For example, victims are less likely to use assertive behavior in response to bullies, and are more likely to internalize the problem, or ask someone for help (Phelps, 2001). Further, chronic victims of peer aggression differ from peers who are rarely victimized on the way that they process social information, such that they are more attune to aggressive stimuli (Gouze, 1987), and exhibit deficits in the ability to generate potential solutions (Camodeca et al., 2002). Research has shown that victims are more likely to blame themselves for social failure than are non-victims (Prinstein et al., 2005), though the opposite is true for aggressive-victims, who are more likely to externalize blame and become angry at their aggressors (Camodeca et al., 2002).

Extant literature examining the coping process as it relates to peer victimization is limited in scope because it has focused on identifying coping strategies employed by victims. Few studies have examined the cognitive processes associated with coping with peer victimization, and only a handful of studies were identified that examine how social goals are impacted by exposure to peer victimization. However, researchers have speculated that goals may mediate or moderate the relation between victimization and coping behaviors (e.g., Crick & Dodge, 1994; Rubin & Rose-Krasnor, 1992).

Social Goals and Coping

The Role of Social Goals in Coping

Many researchers and practicing psychologists agree that goals are a cornerstone of the coping process. For instance, the identification of goals is an important component of several empirically-based psychological treatments of childhood disorders (e.g., Larson & Lochman, 2002; Weisz, Thurber, Sweeny, Proffitt, & LeGangnoux, 1997). Similarly, Lazarus and Folkman (1984) emphasized the importance of goals in driving the coping process and stated that “strategies that are incongruent with such values or goals are likely to be used reluctantly or without conviction and are likely to fail” (pp. 189). Similar statements about the importance of social goals in the coping process have been made in subsequent articles reviewing coping processes, and many researchers have highlighted the need to understand the cognitive mechanisms underlying behavioral coping strategies (e.g., Compas et al., 2001; Compas et al., 1999; Lazarus, 2000). Research has indicated that goals play an important role in predicting behavioral

strategies (Kliewer et al., 2006; Rose & Asher, 1999), and that social goals are distinct from their behavioral enactments (Parkhurst & Asher, 1985).

Social cognitive theory indicates that social goals are antecedents to behavioral strategies and act as a motivating force for the coping process. For instance, Rubin and Rose-Krasnor (1992) postulated that children set goals in response to certain social situations, and then decide what goals to pursue based on environmental considerations. Based on their goals, children enact certain cognitive processes that lead to behavioral strategies intended to achieve a certain goal. This model is similar to that proposed by Crick and Dodge (1994), who included the identification of social goals as the fourth step in the reformulation of their social information processing model. Despite the fact that these theorists present stage models, they do not assume a temporal relation between the stages; emotional, cognitive, and environmental information gained at each step interact in a complex feedback loop that guides subsequent processes and results in cognitive reassessments of previous steps (Erdley & Asher, 1999).

Dimensions of Social Goals

Recent work has focused on identifying social goals that are important and relevant to children and adolescents. Identification of social goals has typically been attained through self-report questionnaires, or semi-structured interviews (e.g., Compas et al., 2001; Chung & Asher, 1996; Ray et al., 2006; Ojanen et al., 2005). For example, Ojanen, Grönroos, and Salmivalli (2005) developed the Interpersonal Goals Inventory for Children (IGI-C), in an attempt to determine the relevance of the interpersonal circumplex model for children. This model posits that social behavior is directed toward

two clusters of goals: agency (e.g., gaining or maintaining control) and communion (e.g., affiliation and intimacy) (Buhrmester, 1996; Gurtman, 1992; Kiesler, 1983). The IGC-C was based on the Circumplex scales of the Interpersonal Values measure (CSIV) developed by Locke (2000) for use with adults. Factor analysis identified eight types of goals that were relevant to children and adolescents, including: (a) agenic goals (e.g., others respect and admire you), (b) agenic and communal goals (e.g., you are able to tell others how you feel), (c) communal goals (e.g., you can put others in a good mood), (d) submissive and communal goals (e.g., the others accept you), (e) submissive goals (e.g., you are able to please others), (f) submissive and separate goals (e.g., you do not say stupid things when the others are listening), (g) separate goals (e.g., you keep your thoughts to yourself), and (h) agenic and separate goals (e.g., the group does what you say). The authors found that the circumplex model provided a good fit with the data, and parsimoniously described the relation between social goals and sociometric status. However, they indicated that the model may not encompass all aspects of social goals that have been identified in the literature. For example, revenge is conceptualized as a reaction to perceived hostility, and cannot be represented on the dimensions included in the interpersonal circumplex model.

Asher and colleagues have assessed the social goals and strategies endorsed by children and adolescents by presenting respondents with a series of benign hypothetical peer problems (e.g., Chung & Asher, 1996; Erdley & Asher, 1996; Rose & Asher, 1999; Troop-Gordon & Asher, 2005). These authors have examined social goals similar to those assessed on the IGC-C, including goals oriented towards maintaining or

establishing positive peer relationships, cooperation, accommodation, and control.

However, they have also examined the influence of retaliation goals on the coping process, and the motivating factor of staying out of trouble.

Other researchers have used semi-structured interviews to identify goals that are salient to children as they negotiate social relationships and interactions. Ray and colleagues (2006) assessed the social goals of 223 students in the fifth and eighth grades (91% African-American) through the use of the Social Competence Interview (Ewert, Jorgenson, & Suchday, 2002). Thirteen goals were identified from the interviews, including: justice (28%), avoidance-withdrawal (25%), social acceptance (22%), happiness/pleasure (16%), dominance (14%), survival (14%), fairness (13%), revenge (9%), moral (4%), functional-instrumental (3%), approval seeking (2%), self-destruction (1%), and self-improvement (0.4%). Although some of these categories are similar to those identified by Ojanen, Grönroos, and Salmivalli (2005) (e.g., acceptance, dominance, approval seeking), goals such as revenge, happiness, and fairness are not represented in the circumplex model. However, revenge has received much empirical attention due to its robust link to aggressive behavior (Lochman et al., 1993; Ray et al., 2006; Rose & Asher, 1999; Troop-Gordon & Asher, 2005). Chen, Matthews, Solomon, and Ewert (2002) used the Social Competence Interview to identify dimensions of social goals that influence adolescents' stress reactivity. Dimensions of social goals that emerged from their interviews included self-defensiveness (e.g., trying to stop hostile criticism or rumors), acceptance-affiliation (e.g., trying to secure someone's affection), competitiveness (e.g., trying to convince others of your talent), and self-improvement

(e.g., striving to achieve a desired skill). In another qualitative study that used the Social Competence Interview to identify social goals, Ray et al. (2006) found that even though only 9% of their sample identified revenge goals, revenge accounted for 15% of the variance in delinquency. Further, revenge moderated the relation between exposure to community violence and delinquency, such that the relation between victimization and delinquency was only significant for children who identified revenge goals.

As evidenced from the studies listed above, children are motivated by a number of different goals when dealing with peer problems. Studies have shown that children often have competing goals as they negotiate their social behavior, and the importance of certain goals change as interpersonal transactions play out (Troop-Gordon & Asher, 2005). Hence, social goals are flexible and changeable (Lazarus, 1993; Lazarus & Folkman, 1984) and further understanding their impact on behavior may provide an important point of intervention.

The Link between Social Goals and Behavior

Empirical evidence supports the notion that there is a relation between social goals and behavior. Salmivalli, Ojanen, Haanpää, and Peets (2005) examined the mediating role of social goals in the relation between peer- and self-perceptions and social behavior in a sample of fifth and sixth graders from Finland. They found significant direct effects between positive peer perceptions and prosocial behavior, and positive self-perceptions were negatively associated with withdrawal. However, these effects disappeared when social goals were entered as a mediator, indicating that the relation between self- and peer-perceptions and behavior was completely mediated by

social goals. The authors also reported significant relations between specific social goals and behavior. For example, proactive aggression, defined as a premeditated act intended to achieve a desired outcome, was associated with social goals oriented towards agenic outcomes (e.g., gaining power over a situation; commanding respect from others). Prosocial behavior was positively associated with communal social goals (e.g., maintaining a relationship; getting close to another person) and negatively associated with agenic goals. Withdrawal was associated with neither communal nor agenic goals. As hypothesized, there was no relation between social goals and reactive aggression.

In another study, Erdley and Asher (1996) demonstrated a significant relation between distinct social goals and behavioral strategies, as measured by presenting children with hypothetical situations involving peer conflict. The authors compared the goals of children who would respond aggressively, passively, or would use problem solving. They found that aggressive children endorsed retaliation goals, indicating that their main objective in the situation was to get back at the other person or make the other person feel bad. Both withdrawn children and those who would engage in problem solving endorsed communal goals, indicating that their behavior was motivated by a need to work the problem out peacefully, or to try to get along with the other person involved.

Rose and Asher (1999) examined the influence of social goals on behavior in hypothetical situations involving normative conflict that may occur between close friends. Examples of hypothetical situations included conflict over what game to play, deciding whether to help a friend with homework instead of finishing a project oneself, and jealousy over a friend asking another child to play during recess. Similar to the

previously summarized studies, the authors found that social goals significantly predicted behavioral strategies. For instance, students who emphasized the Relationship Maintenance goal were more likely to select a strategy that required them to compromise with their friend or accommodate the friend's needs. Further, the Relationship Maintenance goal was negatively related to strategies that prioritized needs of the self, or those that were hostile in nature. The Instrumental-Control goal was negatively correlated with strategies involving compromise or accommodation, and positively associated with strategies prioritizing self-interest or hostility. Finally, children endorsing the Revenge goal were more likely to select hostile strategies, or those that prioritized their needs over those of their friend. The authors also determined that revenge was the only significant predictor of friendship quality, such that the best friends of children who identified the highest number of revenge goals rated the friendship more negatively on relationship qualities such as caring, conflict, intimate exchange, and companionship.

Lochman, Wayland, and White (1993) also found an association between revenge goals and strategies. In their study, boys who had been identified as either aggressive or nonaggressive responded to a series of questions assessing their goals and strategies for dealing with an event in which a student unknown to them bumped into them in the hallway. Participants rated the level of importance of four goals on a 4-point Likert scale, ranging from "not important" to "very important." Goals included avoidance (e.g., get away from the situation as soon as possible), dominance (e.g., let him know who's boss), revenge (e.g., get back at him), and affiliation (e.g., work things out and get to know him better). Then, the students identified what strategy they would use to achieve their goal:

verbal assertion, verbal or physical aggression, bargaining, or other (e.g., help-seeking, non-confrontation, direct action). The authors found that aggressive boys had significantly higher ratings of revenge than nonaggressive boys (26% vs. 0%), and significantly lower ratings of affiliation (43% vs. 75%). Further, social goals explained differences between the solutions identified by aggressive and nonaggressive boys, such that differences in bargaining, aggression, and verbal assertion were only significant when their main social goals were considered.

Troop-Gordon and Asher (2005) examined how social goals change as children experience obstacles to their attempts at conflict resolution. Their study involved presenting 252 children aged 9-12 with six hypothetical situations involving peer conflict and assessing what they would do in the situation, and how strongly they would pursue the following goals: (a) seeking fairness, (b) avoiding injury, (c) avoiding getting into trouble, (d) becoming friends, (e) getting along with the peer, (f) retaliating, (g) maintaining personal control, (h) instrumental gain, (i) ensuring mutual enjoyment, (j) avoiding a fight, and (k) maintaining a positive image. The interviewer asked the child what they would do if the first strategy was ineffective, and the importance of the eleven goals was assessed again in relation to the second strategy. This was repeated a third time, such that children identified their goals and strategies pre-obstacle, after one obstacle, and again after a second obstacle.

The authors compared the social goals of four subgroups of children: passive-rejected (e.g., were not well-liked by their peers and were nonaggressive), aggressive-rejected (e.g., were not well-liked by their peers and were aggressive), well-liked, and

average. They found that children's goals changed significantly as they were presented with obstacles to their initial strategies, and goals depended in part on sociometric status. For all participants, relationship maintenance goals were rated as the most important at the pre-obstacle phase of the interview. However, children were less likely to pursue a relationship maintenance goal after they had experienced a second obstacle to conflict resolution. Further, in comparison to well-liked and average peers, children in both rejected groups were less likely to relinquish instrumental goals, and less likely to prioritize relationship maintenance goals. Significant changes in the ratings of retaliation goals were detected, such that children in the passive-rejected group were the quickest to adopt retaliation goals in response to obstacles to conflict resolution; mean ratings of how strongly they would pursue retaliation increased from 1.71 to 2.24 after one obstacle, but decreased to 2.14 after two obstacles. Aggressive-rejected children also placed more value on retaliation, but this change was not significant until they had been presented with two obstacles ($M = 1.71$ at pre-obstacle phase, $M = 2.48$ after second obstacle). The authors identified specific combinations of changes in goal modifications that were associated with maladaptive strategies, and individuals in the rejected groups were more likely to endorse these patterns of goal modifications than their better-liked peers. These findings underscore the importance of examining how interpersonal experiences shape cognitive processes, particularly goals, as children cope with relatively benign peer problems.

Peer Victimization and Revenge Goals

Empirical studies examining the relation between exposure to peer victimization and the subsequent development of revenge goals are scant. However, the few studies that have been conducted support a link between these constructs. Mah (2001) conducted a qualitative study that involved analyzing statements made by 95 Canadian junior high school students about bullying. The results of multidimensional scaling and concept mapping were used as the basis for a self-report survey that was administered to an additional 450 junior high school students. The survey included items that questioned students about the type of victimization they had experienced, their reaction to bullying, and how they coped. The large majority of students had been bullied (86%), with most students reporting instances of name-calling, followed by physical aggression. The most common reaction to being bullied for all participants, regardless of gender, was the desire to seek revenge.

Coleman and Byrd (2003) examined the link between peer victimization and revenge within the context of forgiveness. They conceptualized forgiveness using a model developed by McCullough and colleagues (1998) that proposed a six-stage process of forgiveness. The first stage of the model, *revengeful forgiveness* refers to the ability to forgive only after an act of retaliation has occurred on the part of the forgiver. Results of the zero-order correlational matrices demonstrated a significant relation between teacher-reported peer victimization and revengeful forgiveness for male students. This relation was not significant for females, or for self-reported levels of victimization.

In a longitudinal study, Kochenderfer-Ladd (2004) examined the mediating effects of emotions on the relation between peer victimization and coping in an ethnically diverse sample of elementary school-aged children. Coping strategies included conflict resolution, cognitive distancing, advice and support, and revenge. Students' exposure to peer victimization, coping, and emotional reactivity were assessed twice during the school year, once in the fall, and once in the spring. Results indicated that peer victimization and revenge were significantly and positively correlated at both time points. Further, girls and boys were equally likely to endorse revenge-seeking behaviors. This was particularly true if they experienced feelings of being upset or angry in response to peer victimization.

In sum, little research has been conducted that examines the link between peer victimization and revenge goals. The results of the studies discussed previously demonstrate a significant, positive relation between peer victimization and revenge goals. Initial evidence suggests that this relation is stronger for boys than girls. Because of the designs and specific hypotheses of the existing studies, it is impossible to determine whether experiences of peer victimization promote the development of revenge goals, or whether children who have the tendency to seek revenge are more likely targeted by their peers. It is clear that additional studies need to be conducted to determine the magnitude and mechanisms underlying this link.

The Socialization of Coping

Parents as Socializing Agents

Bandura's (1977) social learning theory offers a plausible explanation of how

parental attributes influence aggressive tendencies in children. According to this model, children learn aggressive behavior by observing and then modeling the aggressive behavior of esteemed others. Central to this theory is that children are positively reinforced after engaging in aggressive acts, or they observe others being rewarded for aggression. Aggression is reinforced internally (e.g., the child feels pleasure or a sense of connection by modeling the behavior of a parent), or externally (e.g., the child is praised by a parent for being tough on the playground). MacKinnon-Lewis, Rabiner, and Starnes (1999) wrote, “children are presumed to enter new peer situations with a ‘database’ that includes prior experience with family and peers and the social schemas that have developed from that experience” (pp. 632). Socialization of aggression does not only occur through the child observing the behavior of others, but through perceiving cognitive processes of others as well. Costanzo and Dix (1983) explained that children observe their parents in social interactions, and attempt to determine the values and cognitive processes that drive their parents’ behavior. Several studies have shown that children and adults tend to adopt the same attributions that they perceive significant others to have during social interactions (Costanzo & Dix, 1983). As children observe their parents’ social interactions, they are not only acquiring new information to be included in their behavioral repertoire, but are also speculating about their parents’ social cognitive processes and are incorporating these perceptions into their own social schemas.

No studies were identified that examined the influence of parental attitudes towards aggression on the relation between peer victimization and the development of

revenge goals. However, results of studies examining related constructs lend support to the hypothesis that parents have a significant role in this relation. For example, a study conducted by Orpinas, Murray, and Kelder (1999) demonstrated the importance of parental attitudes towards aggression on aggressive behavior in middle school children. Their cross-sectional study examined the relative contributions of four parental factors on self-reported levels of aggression of students attending middle school in an urban setting. The parental factors included family structure, parental monitoring, the quality of the parent-child relationship, and perceived parental attitudes towards fighting. Results of the regression analysis found that parental attitudes towards fighting accounted for the majority of variance in the aggression score (14%), followed by the quality of the parent-child relationship (2%), parental monitoring (1%), and family structure (< 1%). This study is important because most research examining familial factors associated with the development of childhood aggression have focused on relationship quality or control variables (e.g., monitoring, discipline style). In fact, there is a dearth of literature that examines the impact of parental attitudes on aggression. The Orpinas et al. (1999) study underscores the need for future research to further explore the mechanisms underlying the relation between parental attitudes and aggression in children.

Kliewer and colleagues (2006) demonstrated the socializing effects of caregivers on children's coping with community violence. In their study, parents and their children (aged 9-13) living in neighborhoods characterized by high levels of violent crime watched a video clip from *Boys in the Hood* in which a group of young African American boys learn about a neighborhood killing. As the boys go to the location of the body, they

encounter a group of older African American boys who steal their football. The clip ends after a fight among all of the boys. Information was collected regarding psychosocial functioning of the child, coping behaviors of the parent, and information regarding the family context. In addition, the parent-child dyads were videotaped as they answered questions regarding how the child would cope if they were in the situation captured in the video clip. Coding by six individuals indicated that the majority of parents (96%) advocated at least one active coping strategy (e.g., calling the police), followed by proactive avoidance (59%; e.g., don't go places you shouldn't go), resignation (40%; e.g., sometimes bad things happen), seeking emotional support (36%; e.g., praying to God), or thinking before acting (13%; e.g., think about what happened and get peace of mind before you do something). However, 11% of the parents suggested responding aggressively. Examples of aggressive responses included, "Stay and fight," "Beat them up," and "If they hit you, you need to stay and fight. Stand up for yourself." Regression analyses pertaining to child aggression indicated that children who engaged in aggressive coping were more likely to have caregivers who suggested aggressive coping techniques, who modeled aggressive coping, and who had a poor relationship with their child. The authors suggested that children whose parents coach or model aggressive coping believed that they have their parents' blessing to engage in violent behavior.

Similar conclusions were suggested by a study conducted by Kliewer and colleagues (2004) that examined the buffering effect of parental factors on the adjustment of early adolescents exposed to high levels of community violence. Parental factors included the quality of the caregiver-child relationship, and the caregiver's skill at

regulating their emotions. Neighborhood cohesion was also assessed as a potential protective factor against the development of internalizing and externalizing problems in children. The study examined psychosocial adjustment and emotion regulation skills in children between the ages of 9 and 12 at two time points, six months apart. Results of multiple regression analyses that predicted child adjustment indicated that the caregiver's ability to regulate anger was protective for the development of externalizing, but not internalizing, problems. The authors suggested that this finding underscores the notion that parental modeling of coping with anger is an important predictor of child's adjustment. It is reasonable to hypothesize that children whose parents value the use of aggression to deal with anger model this belief to their children, who in turn develop coping mechanisms that result in externalizing behaviors.

Researchers have begun to examine the interplay between parent-child interactions and child latent mental structures, and how this interaction impacts social functioning in multiple domains (Heidgerken et al., 2004; MacBrayer, Miclich, & Hubdley, 2003; McDowell & Parke, 2002; Pianta, 1999; Rudolph & Asher, 2000). Hence, early interactions between parents and their children provide the basis from which children develop latent mental structures regarding themselves and others, and provide a general framework that guides the child's general approach to their social surroundings (Greenberg, Speltz, & DeKlyen, 1993; Heidgarten et al., 2004).

MacBrayer, Milich, and Hundley (2003) conducted a study in which they found support for the hypothesis that mothers transmit social information biases to their daughters. In their study, mothers and their children read hypothetical vignettes, and then

responded to two open-ended questions: (a) Why do you believe the exchange occurred, and (b) What would you intend to do if this situation was happening to you (or what do you think your child would do, depending on the context of the situation). Mothers read four vignettes that involved an interaction between themselves and an adult peer, an interaction with her own child, her child in an interaction with a classmate, and her child in an interaction with a teacher. The vignettes assigned to the children involved a social interaction with a classmate. All of the conflicts included in the vignettes were ambiguous, and involved both physically (e.g., being hit by a ball on the playground) and relationally (e.g., being left out of an activity) aggressive situations. Results indicated that mothers with aggressive children were more likely to attribute hostile attributions in regards to their own interpersonal interactions with adult peers, as well as their child's interactions with a same-aged peer. Further, mothers of aggressive children were more likely to identify retaliatory goals when compared to mothers with non-aggressive children. Similarly, aggressive children were more likely than their nonaggressive counterparts to report retaliatory intentions. This effect did not depend on gender or provocation type (physical vs. relational), although effect sizes were greatest when vignettes depicted relationally aggressive situations.

Results found that mothers and daughters processed social information similarly, in that significant correlations were detected between how mothers and daughters each reported that they would cope with their own interpersonal conflict. For instance, the authors reported a significant positive correlation between the attributions of mothers and their daughters when they were considering potentially physical conflicts, ($r = 0.53$). The

behavioral intentions of daughters and mothers were significantly correlated for potentially physically aggressive conflicts, ($r = .29$) and for potentially relationally aggressive conflicts, ($r = .46$). However, no significant correlations between the attributions and behavioral intentions of boys and their mothers were detected. The authors concluded that mothers of aggressive girls are socializing their daughters to assume negative intent on the part of others, and that retaliation is an acceptable goal for handling the situation. They speculate that boys may be more likely to model the social interactions of male figure heads, accounting for the lack of significant results found between mothers and their sons.

In sum, social learning theory emphasizes the role that parents play in modeling social behavior to their children (Bandura, 1977). Some researchers have taken this notion one step further, indicating that children not only imitate their parents' behavior, but also emulate the way they perceive their parents to process social information (Constanzo & Dix, 1983; MacBrayer, Milich, and Hundley, 2003). Orpinas and colleagues (1999) demonstrated that of four parental factors studied, parental attitudes towards aggression accounted for the largest portion of variance in child aggression. Similarly, Kliewer et al. (2006) found that aggressive children were more likely to have parents that suggested aggressive strategies for dealing with peer conflict, and who modeled aggressive coping. Further, MacBrayer, Milich, and Hundley (2003) found significant correlations between negative attributions and retaliatory intentions for aggressive girls and their mothers. Taken together, the results of these studies provide initial support for the notion that parents transmit their attitudes towards aggression to

their children through the socialization process, and this process contributes to the development of revenge goals in children experiencing peer conflict.

Deviant Peers as Socializing Agents

As children transition to middle school, peers begin to assert more power and influence over child behavior and development. In fact, developmental psychologists have indicated that the central developmental task during adolescence is peer acceptance (Holmbeck, 1994). Engaging with peers and forming friendships is an important process for healthy psychosocial adjustment (for review, see Rudolph & Asher, 2000). Interacting with same-aged peers provides a social context that is necessary for developing the social and communication skills inherent in prosocial behavior. However, the importance that youth place on peer acceptance can also have detrimental effects. Youth are the most prone to peer pressure during the middle school years, and the desire to be accepted by their peers may lead them to problem behaviors they may not have engaged in otherwise. Extant literature has demonstrated a robust link between involvement with deviant peers and problematic behavior, including drug use, aggression, sexual activity, and delinquency. The question of whether this phenomenon is a result of peer influences or merely the result of youth selecting friends that are like them has been debated (see Gifford-Smith et al., 2005). Studies have begun to examine the degree to which deviant peers influence changes in internal processes that support problem behavior, though research in this area is scarce. However, continued research on this topic is important for understanding the mechanisms underlying the relation between peer deviance and problem behavior.

As stated previously, research has established a significant link between exposure to deviant peers, aggression, and other problem behaviors (e.g., Dishion, Andrews, & Crosby, 1995; Dishion, Spracklen, Andrews, & Patterson, 1996; Thornberry & Krohn, 1997). Extant research supports a causal explanation of this link, such that interacting with deviant peers leads to subsequent development of problem behavior. Hanish et al. (2005) demonstrated the peer contagion effect in a sample of low-risk Kindergarten students. Using observational and teacher-reported data, they found that girls who had no history of aggressive behavior at the outset of the study who spent the majority of their playtime with peers who had externalizing problems exhibited higher levels of aggression, hyperactivity, and anxiety by the end of the fall term. This was not the case for boys, who were more likely than girls to spend time with aggressive or hyperactive peers. Berndt, Hawkins, and Jiao (1999) found that students who “dropped” deviant friends after they transitioned from elementary to middle school exhibited lower levels of problem behavior at their new school. Students who remained friends with deviant peers had similar or higher levels of problem behavior as they transitioned to junior high. The impact of exposure to deviant peers on aggression and problem behavior is particularly pertinent for “late starters,” or youth who do not begin exhibiting problem behavior until mid- to late-adolescence (Elliott & Menard, 1996; Keenan et al., 1995; Moffitt, 1993).

Boxer and colleagues (2005) found that the peer contagion effect is particularly detrimental for less-aggressive children who are embedded in peer social structures that support aggression. Their study looked at changes in aggression over the course of an intervention by applying a three-level Hierarchical Linear Modeling (HLM) that

predicted the composite aggression score as a function of time (Level 1), characteristics of the child (Level 2), and characteristics of the peer group (Level 3). Results indicated that exposure to peer deviance affected changes in individual levels of aggression from pre-intervention to post-intervention for children in the third and sixth grades. Consistent with previous studies, they found that children who were exposed to higher levels of aggression at the individual level exhibited increases in aggression over time. In addition, they found that increases in aggression over time were predicted by a discrepancy between the individual's aggressivity and that of the group. The authors dubbed this effect the "*discrepancy-proportional peer influence*," which posits that the child's behavior will change in the direction toward that of the group. Children who were less aggressive than their intervention group showed greater increases in aggressivity post intervention, whereas children with higher initial levels of aggression had lower subsequent levels of aggression.

The robust link between engagement with deviant peers and problem behavior has led researchers to examine the underlying mechanisms driving this relation. Dishion and colleagues have been instrumental in this line in research, and have coined the term "deviancy training" to refer to the process by which deviant peers influence the development of problem behaviors (e.g., Dishion et al., 1995; 1996; 1997). In an observational study, Dishion et al. (1996) coded videotaped conversations between boys aged 13-14 and their friends in an effort to determine the processes that underlie peer influence on deviant behavior. Peer dyads were divided into three groups: dyads in which neither boy had been arrested; dyads in which one member had been arrested; and dyads

in which both members had been arrested. They found that normative topics that were not antisocial in nature were coded the most frequently across all dyad groups. However, rule-breaking topics were relatively common, with an average rate of 2.56 codes per minute across all dyads. The authors found that dyads whose members had not been arrested were more likely to respond positively to normative talk, and less likely to laugh at rule-breaking topics. The reverse was true for boys in the dyads that included at least one member who had been arrested, for whom rule-breaking behavior was rewarded with laughter and conversations about normative topics were discontinued. They found that in the delinquent dyads, laughter led to more topics about rule breaking, whereas this was not demonstrated in the non-delinquent dyads. Finally, results of an analysis of covariance found that engaging with a deviant peer led to increases in self-reported delinquent activity over the next two years, a finding that was strongest for boys who had lower levels of delinquency at the first assessment.

Patterson, Dishion, and Yoerger (2000) found similar results in a school-based study that tracked their social development from the ages of 10 to 18. The emphasis of their study was on the role of positive reinforcement by peers in the acquisition of new forms of deviant behavior. The researchers collected data regarding deviancy training, involvement with deviant peers, and engagement in antisocial behavior by direct observation, and self-, parent-, and teacher- report. Assessments occurred in multiple settings, including the home, the school, and the community. Structural equation modeling demonstrated that early involvement with deviant peers led to an increase in problem behavior by age 14, and that this growth was explained by the positive

reinforcement that the deviant peer group provided for problem behavior (e.g., acceptance, deviant talk, rewarding reactions to deviant behavior such as laughter).

As Dishion and colleagues stated in 1996, “Very little research has focused specifically on the socializing process in which friendships may exert their influences” (pp. 374). Although some progress has been made in this area, few studies were identified that examined the role of deviant peers in the development of coping processes. Further, no studies were identified that determined whether involvement with deviant peers impacts the way that victimized youth cope with peer aggression. However, this is an important area of investigation given literature that has demonstrated that victimized and/or rejected youth are more likely to associate with aggressive peers (Hanish et al., 2004). There is initial evidence in the literature to suggest that exposure to peer deviance affects internal attitudes about aggression (Cohen & Prinstein, 2006).

Employing a novel experimental design using a combination of sociometric information and an internet chat-room, Cohen and Prinstein (2006) demonstrated the strong influence that peer deviance has on both the external and internal endorsement of attitudes supporting aggression. Their study involved a combination of self-report questionnaires that assessed the attitudes about aggression of White male students in the eleventh grade, as well as their engagement in aggressive behavior. Participants also completed sociometric ratings of their peers. Additional information regarding public conformity to social norms was collected from an experimentally manipulated chat room, in which participants were misled to believe they were interacting via the chat room with either a high status or low status peer, although both were confederates. Results indicated

that, regardless of self-reported levels of aggression, students conformed to attitudes supporting aggression and other problematic behaviors (e.g., physical aggression, teasing, vandalism, substance abuse) if they were interacting with the “high status” confederate, but not if they were interacting with the low status confederate. The effect size for this finding was in the medium/large range, ($d = 0.73$). Similarly, students who interacted with “popular” e-confederates were more likely to endorse private attitudes supporting aggression than those who interacted with “low-status peers.” The findings demonstrated that students not only publicly conform to the views of high status peers, but also internalize the attitudes that they perceive popular peers to have.

In sum, extant literature has underscored the importance of peers as socializing agents for middle school students (Holmbeck, 1994). A plethora of research has indicated that involvement with deviant peers is associated with subsequent increases in a variety of problem behaviors, including delinquency (e.g., Dishion et al., 1996) and aggression (e.g., Hanish, 2005). Although the effect of peer deviance on problem behaviors is in part due to a selection bias, a large body of research suggests that there is a causal link between spending time with deviant peers and a subsequent increase in problem behavior (see Dishion et al., 2005; Hartup, 2005). Youth who have lower levels of problem behavior prior to involvement with a deviant peer are more susceptible to the negative consequences of peer influences (Boxer et al., 2005). Research by Dishion and colleagues (1996) has suggested that a potential mechanism through which deviant peers exert their influence is through positive reinforcement of antisocial behavior (Dishion et al., 1996; Patterson et al., 2000). Cohen and Prinstein (2006) demonstrated that the effects of

deviant peers extend beyond social behavior, but actually affect latent cognitive structures including individual attitudes endorsing aggression. No studies have been identified that examine the impact of deviant peers on victimized youth, despite literature that supports the notion that victimized or rejected youth are more likely to associate with deviant peers (Hanish et al., 2004).

STATEMENT OF THE PROBLEM

The present study examined the impact of exposure to peer victimization on changes in the endorsement of revenge goals from the beginning to the end of the sixth grade. The moderating effects of aggression, parental attitudes toward aggression, and involvement with deviant peers were tested. Potential gender differences in the relations of these variables were examined. The hypothesized model for this study is presented in Figure 1.

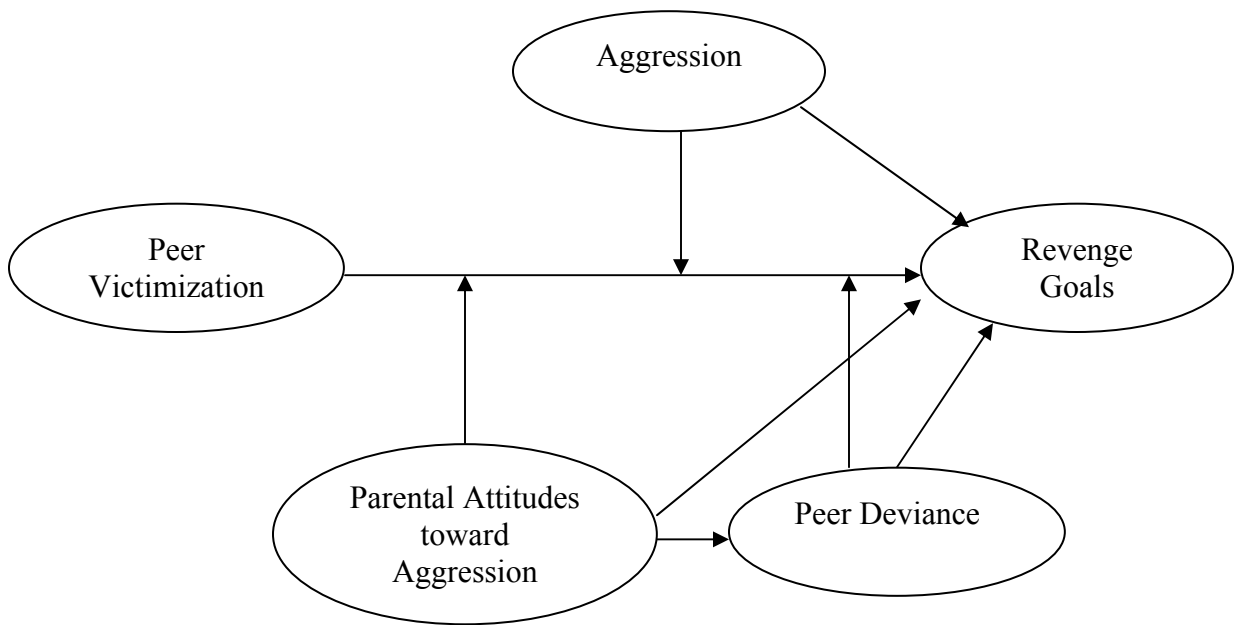


Figure 1. Path diagram displaying the hypothesized relation between exposure to peer victimization and revenge goals, as well as the moderating effects of parental attitudes toward aggression and involvement with deviant peers on this relation.

This study tested the following hypotheses:

- (1) Exposure to overt and relational victimization at Wave 1 will predict subsequent increases in the endorsement of revenge goals at Wave 2. Existing literature

suggests that boys are more likely than girls to identify revenge goals when faced with peer conflict (Coleman & Byrd, 2003). It is hypothesized that gender will moderate this relation, such that the relation between victimization and revenge goals will be stronger for boys than for girls.

(2) Physical aggression will moderate the relation between exposure to overt victimization at Wave 1 and the endorsement of revenge goals at Wave 2. This hypothesis will specifically test coping differences among overtly aggressive-victims, passive-victims, and non-victims. Existing literature suggests that aggressive-victims differ from passive-victims in their attention to aggressive cues in the environment, as well as their ability to generate possible coping strategies (Sanders, 2004). In addition, aggressive youth are more likely to endorse revenge goals in comparison to their less aggressive counterparts (Lochman et al., 1993). Based on these findings, it is hypothesized that the relation between overt victimization and revenge goals will be stronger for students with higher levels of physical aggression.

(3) Relational aggression will moderate the relation between exposure to relational victimization at Wave 1 and revenge goals at Wave 2. This hypothesis will specifically test coping differences among relationally aggressive-victims, passive-victims, and non-victims. Existing literature has found that relationally aggressive youth report more hostile attribution biases in comparison to nonaggressive peers in response to hypothetical situations involving relational aggression (Crick et al., 2002), and that children who choose relationally aggressive strategies to cope with relational victimization were more likely to endorse revenge goals and other control-related goals

(Delveaux & Daniels, 2000). As such, it was hypothesized that the relation between relational victimization and revenge goals would be strongest for students with higher levels of relational aggression.

(4) Parental attitudes toward aggression will moderate the relation between overt and relational victimization at Wave 1 and revenge goals at Wave 2, such that the relation will be stronger for students whose parents are more supportive of aggression.

(5) Involvement with deviant peers will moderate the relation between overt and relational victimization at Wave 1 and revenge goals at Wave 2, such that the relation will be stronger for students with more deviant peers.

The present study contributed to the existing literature in several ways. Previous studies have demonstrated that exposure to peer victimization affects coping processes such that youth who have been victimized by peers attend more regularly to aggressive cues in their environment, generate fewer potential alternatives or strategies, and enact ineffective and/or aggressive strategies when dealing with peer conflict. However, only three studies were identified that examined the relation between peer victimization and revenge goals (Coleman & Byrd, 2003; Kochenderfer-Ladd, 2004; Mah, 2001), all of which found positive associations between these constructs. Two of these studies employed a cross-sectional design (Coleman & Byrd, 2003; Mah, 2001), and one study did not examine changes in revenge goals over time (Kochenderfer-Ladd, 2004), making it impossible to determine whether peer victimization caused changes in revenge goals (Kazdin, 2003). The link between peer victimization and revenge goals merits additional empirical attention due to: (a) the prevalence of peer victimization in middle school

populations (Farrell et al., 2006; Pelligrini et al., 1999), (b) the difficulty that youth report in dealing with peer victimization (Farrell et al., 2006), and (c) the robust relation between revenge goals and aggression (Lochman, 1993; Ray et al., 2006; Rose & Asher, 1999; Troop-Gordon & Asher, 2005). The current study addressed this gap in the literature by utilizing a prospective design to test a causal relation between peer victimization and the tendency to prioritize revenge goals in response to peer conflict in sixth-grade students.

This study examined the effects of gender on the longitudinal relation between peer victimization and revenge goals. Cross-sectional studies have supported the notion that boys exhibit a greater tendency to identify revenge goals in response to hypothetical situations involving peer conflict, whereas girls are more likely to be motivated by relationship maintenance goals (Chung & Asher, 1996; Erdley & Asher, 1996; Rose & Asher, 1999). The present study examined the extent to which this finding is maintained over time, and whether it holds true for victimized youth.

This study examined the extent to which aggression affects the strength of the relation between peer victimization and revenge goals. Researchers in the area of peer victimization consistently differentiate between passive-victims and aggressive-victims. Passive-victims represent a subgroup of youth who are often socially withdrawn, may be depressed or anxious, and are perceived by bullies as being unable to defend themselves (Olweus, 1993; 2001). Aggressive-victims tend to be impulsive and hyperactive and fight back when confronted with victimization (Schwartz et al., 1998). Several studies suggest that coping processes differ in aggressive and non-aggressive youth. When compared to

non-aggressive peers, aggressive youth are more likely to attend to aggressive cues in their environment (Gouze et al., 1987), assume that others are behaving in intentionally hostile ways (Crick & Dodge, 1994), and generate fewer effective strategies for dealing with peer conflict (Richard & Dodge, 1982). However, many studies of adolescent coping have not adequately addressed the differences between aggressive-victims and passive-victims, and have either examined the two subgroups together as “chronic victims” (e.g., Phelps, 2001; Smith, Shu & Maddsen, 2001), or have mainly focused on aggressive youth (e.g., Lochman et al., 1993). The present study addressed this limitation by examining the degree to which aggression moderates the relation between peer victimization and subsequent revenge goals.

Another way that the current study added to the existing literature is by examining the coping processes related to peer victimization in a large, ethnically-diverse sample. Much of our knowledge about adolescent coping is based on studies that have used predominantly Caucasian samples (e.g., Camodeca et al., 2003; Crick, Casas, & Ku, 1999; Erdley & Asher, 1996; Gouze, 1987; Prinstein et al., 2005; Rose & Asher, 1999). More specifically, the two identified studies that linked peer victimization and revenge goals had samples of almost exclusively middle to upper-middle class Caucasian youth. However, there is ample evidence that peer victimization is a salient and harmful stressor for minority youth (Farrell et al., 2006; Graham & Juvonen, 2002; Graham, Bellmore, & Juvonen, 2003; Hanish et al., 2005). One of the strengths of this study is the use of an ethnically- and geographically- diverse sample, improving the generalizeability of the results.

This study added to the literature by examining the role of parents and peers in the relation between peer victimization and subsequent revenge goals. Parents (Quamma & Greenberg, 1994) and peers (Hodges et al., 1999) are important sources of support and advice for victimized youth. Children are affected by the messages that their parents and peers send through a complex socialization process involving positive reinforcement through direct action and observation (Bandura, 1977). According to social learning theory, children's perceptions about the attitudes parents and peers have about the appropriate way to deal with peer victimization will influence their coping processes. Little empirical research has examined how parental attitudes toward aggression and involvement with peer deviance impact the social cognitive processes that occur during coping with interpersonal conflict. The current study examined whether these variables moderate the relation between peer victimization and revenge goals, with the ultimate goal of providing useful information for researchers and program developers.

METHOD

Participants

Data were obtained from the Multisite Violence Prevention Project (MVPP), a longitudinal investigation of the development and prevention of violence among middle school students (Miller-Johnson et al., 2004). MVPP involved students from 37 schools across four diverse geographical sites: Durham, NC; Northeastern Georgia; Chicago, IL; and Richmond, VA. Participating schools in Chicago served students in kindergarten through eighth grade. Participating schools at the other three sites were large middle schools. Table 1 summarizes the demographics of the schools.

Table 1.

Demographic Characteristics of Participating Schools by Site

	Average # 6 th Graders n	Black %	Hispanic %	White %	Free or reduced- price lunch %
Durham, NC	241	66	5	26	42
Northeastern GA	239	34	12	55	47
Chicago, IL	70	46	48	16	96
Richmond, VA	236	84	6	9	75

In Northeastern Georgia, all schools within four districts were recruited to participate. In Durham and Richmond, nearly all of the schools within the district participated in the study. Chicago consisted of a substantially larger school district compared with the other sites. Schools in Chicago were selected based on enrollment size (> 1100), percentage of students who met criteria for low income (>55%), percentage of

students who lived within the school district boundaries (>75%), and travel time to University of Illinois at Chicago was less than one hour by public transportation. In addition, the principals and teachers at all eligible schools had to be willing to participate in random assignment.

Across all four sites, 37 schools were recruited to participate in an experimental study of school-based universal and selective violence prevention interventions for students in the sixth grade. Within each site, schools were randomized to one of four conditions: universal only, selective only, universal and selective, or control. This study included data from two successive cohorts of sixth grade students who entered the sixth grade in 2001 and 2002. Efforts were made to recruit a random sample of approximately 100 students from each school in Durham, Richmond, and Northeastern Georgia. Efforts were made to recruit all students attending eligible schools in Chicago due to smaller class sizes. Participation rates ranged from 68% to 84% across the sites, resulting in a sample of 65 to 85 students from each school. Approximately 94% of students present at Wave 1 also provided data at Wave 2. Active parental consent and student assent were obtained for all participants. The study excluded students who spent the majority of their day in self-contained classrooms, as the intervention was not designed to meet their needs. In addition, 112 students who repeated the sixth grade and were part of the second cohort were excluded from the study. The data from nine students were excluded from the final sample due to the likelihood that their patterned responses (e.g., 1,2,3,1,2,3) were not representative of their perceptions. The total sample was comprised of 5,068

students who were assessed in the fall of the sixth grade year, and again in the spring.

Table 2 includes demographic information for the final sample.

Table 2

Demographic Information for Final Sample

Site	n	Male %	Race/ethnicity			Adult Male In Home %
			Black %	Hispanic %	White %	
Durham, NC	1104	48	53	8	20	68
Northeastern GA	1288	50	29	12	44	76
Chicago, IL	1526	50	36	46	3	73
Richmond, VA	1150	49	72	5	6	60
Total	5068	49	46	20	17	69

Procedures

Student data were collected in small groups (3:1 ratio of students to research staff) in a room at each school (e.g., media center, library, cafeteria). All student surveys were completed on laptop computers using a computer-assisted survey instrument (CASI). Students listened to the survey questions through headphones while reading along on the computer screen. Students entered their responses using the keyboard. All students were administered questionnaires in English.

Measures

Measures for this study included self-assessments of exposure to peer victimization, revenge goals, aggression, parental attitudes toward aggression, and involvement with deviant peers. Alphas were calculated for each scale based on Wave 1 data from Cohort 1. Scores for overt victimization, relational victimization, physical

aggression, relational aggression, and revenge goals were log transformed to reduce their degree of skewness and kurtosis.

Peer Victimization. Students' experiences of peer victimization were measured by the Relational Victimization and Overt Victimization subscales of the Problem Behavior Frequency Scale (Farrell et. al., 2000). Students answered 12 items (six from each subscale) that assessed how frequently a negative peer event had happened to them in the past 30 days. The frequency of each item was rated on a six-point scale: 1=*Never*, 2= *1-2 times*, 3= *3-5 times*, 4= *6-9 times*, 5= *10-19 times*, and 6=*20 times or more*. Items assessing level of overt victimization included "been hit by another kid," and "another student threatened to hit or physically harm you." Examples of items on the relational victimization scale included "had someone spread a false rumor about you," and "been left out on purpose by other kids when it was time to do an activity." Several of the items included on this scale were adapted from the Social Experiences Questionnaire – Self Report (Crick & Bigbee, 1998). Confirmatory factor analysis was used to test several competing models regarding optimal scale structure (Miller-Johnson et al., 2004). Fit indices, including the RMSEA, were used to compare the fit of the competing models. Of all models tested, the model with seven different factors representing different forms of aggression and victimization had the best fit, $RMSEA = .081$. Combining physical and relational victimization slightly decreased model fit, $RMSEA = .082$. Internal consistency (alpha coefficients) were .84 for both subscales.

Aggression. The frequency of engagement in physical aggression and relational aggression was assessed using subscales of the Problem Behavior Frequency Scale

(Farrell et al., 2000). Physical aggression was measured by seven items that were based on the Center for Disease Control's Youth Risk Behavior Survey (Centers for Disease Control and Prevention, 1993), such as "thrown something at another kid to physically hurt them," "shoved or pushed another kid," and "threatened to hit or harm another kid." The Relational Aggression scale consists of six items that were based on Crick and Grotpeter's (1995) measure of relational aggression. Representative items include "told another kid you wouldn't like them unless they did what you wanted them to do," "spread a false rumor about someone," and "tried to keep others from liking another kid by saying mean things about him/her." For all items, students reported how frequently they had engaged in specific behaviors over the past 30 days. Responses were based on the same six-point scale described for victimization items. A confirmatory factor analysis, also described for victimization items, provided support for separating physical and relational aggression items into distinct scales (Miller-Johnson et al., 2004). Cronbach's alphas for physical and relational aggression were .80 and .72, respectively.

Revenge Goals. The degree to which students endorsed revenge goals was measured using the Goals and Strategies Questionnaire, which was based on a measure created by Hopmeyer and Asher (1997). Respondents were presented with four vignettes that involved conflict situations with same-sex peers, including two vignettes regarding mild rights infractions (e.g., the child wants to use an object that another child is using), and two vignettes regarding equal legitimacy conflict situations (e.g., two children get to a desired object at the same time). Students rated their goals (e.g., maintaining good relationship, gaining control, revenge) and their likelihood of using six specific strategies

(e.g., mild physical aggression, verbal aggression, verbal assertion, compromise, yield/withdrawal, seek help) for dealing with the situation. Only items pertaining to revenge goals were used in the current study. Revenge goals were measured by asking students to rate their agreement with the statement “My goal would be trying to get back at him/her for what he/she just did” on a five-point Likert scale ($1 = \textit{Really Disagree}$ to $5 = \textit{Really Agree}$) for each of the four vignettes. Cronbach’s alpha for Revenge Goals was .81.

Parental Attitudes Toward Aggression. Students’ perceptions about their parents’ attitudes toward aggression were measured by the Parental Support for Aggressive and Non-aggressive Solutions Questionnaire (Orpinas, Murray, & Kelder, 1999). Students responded *yes* or *no* to 10 declarative statements about whether they had heard the statements from their parents. Confirmatory factor analyses using one- and two- factor models indicated that the two- factor model provided a better fit for the data (MVPP, 2004). The two 5-item scales measured parent support for aggressive solutions ($\alpha = .66$; e.g., “if someone hits you, hit them”) and parent support for non-aggressive solutions ($\alpha = .62$; e.g., “If someone calls you names, ignore them”). As expected, the two scales were moderately correlated ($r = -.45$). The scale score was computed as the mean of the five items on each scale. For the purposes of the current study, only data pertaining to the five items on the parent support for aggressive solutions scale were used.

Peer Deviancy. Students’ involvement with deviant peers was assessed using a 10-item measure that asked students how many of their friends had engaged in 10 delinquent behaviors in the last three months (e.g., “skipped school without an excuse,”

“hit someone with the idea of really hurting that person,” “gone joyriding,” “attacked someone with a weapon or other thing to really hurt that person).” Items were adapted from a similar measure used in the Fast Track project (Conduct Problems Prevention Research Group [CPPRG], 1998). Students responded to each item on a 5-point anchored scale: *0 = none of them, 1 = very few of them, 2 = some of them, 3 = most of them, 4 = all of them*. Responses to individual items were averaged to create an overall summary score. Higher scores indicate greater involvement with deviant peers ($\alpha = 0.86$).

Analyses

Descriptive statistics were calculated for all predictor and outcome variables. A Gender by Time repeated measures analysis of variance for each variable was conducted to examine gender differences, changes over time, and whether the changes differed by gender. Correlations among all measures were also calculated. Hierarchical linear regression was used to test the relation between peer victimization and revenge goals. A series of six hierarchical linear regression models was used to determine whether physical aggression, relational aggression, parental attitudes toward aggression, and peer deviancy moderated the relation between either overt or relational victimization and revenge goals. All analyses were replicated for both cross sectional (e.g., Wave 1 data only, Wave 2 data only) and longitudinal (e.g., Wave 1 predictor variables and Wave 2 revenge goals) hypotheses. For all models, overt victimization and moderator variables were centered at their mean, and a product term was calculated from these centered variables. This step was taken in order to reduce the effects of multicollinearity and to improve the meaningfulness of the results (Cohen, Cohen, West & Aiken, 2003). The control

variables of site (dummy-coded variables for Durham, NC; Richmond, VA; and Chicago, IL), intervention condition (dummy-coded variables for universal, selective, or combined), and gender were entered in the first step. For the longitudinal model, Wave 2 revenge goals was the dependent variable. In addition to the control variables identified previously, revenge goals at Wave 1 was also entered as a control variable at Step 1. In the second step, Wave1 scores on either overt victimization or relational victimization, and the moderator variable were entered. In the third step, the interaction between the specific type of victimization and the moderator variable was entered. For models with significant interactions, additional variables were created that represented the difference at the twenty-fifth percentile of the moderator, and the seventy-fifth percentile of the moderator. The regressions were re-run using these new variables in order to determine slope effects at low and high levels of the moderators.

RESULTS

Descriptive Statistics

Table 3 reports the means and standard deviations for all scales used in this study by gender and time. Analyses of variance identified significant gender differences across all seven variables, although the magnitudes of these gender differences were small. At Wave 1, compared to girls, boys reported higher levels of overt victimization, $F(1, 5421) = 122.58, d = .30, p < .001$; physical aggression, $F(1, 5418) = 175.20, d = .36, p < .001$; relational aggression, $F(1, 5418) = 40.39, d = .17, p < .001$; peer deviancy, $F(1, 5356) = 15.25, d = .11, p < .001$; parental support for aggression, $F(1, 5385) = 68.23, d = .23, p < .001$; and revenge goals, $F(1, 5412) = 36.39, d = .16, p < .001$. Boys and girls did not differ in their exposure to relational victimization at Wave 1. Similar patterns were found at Wave 2. Boys had higher levels of overt victimization, $F(1, 5068) = 109.51, d = .29, p < .001$; physical aggression, $F(1, 5066) = 104.25, d = .29, p < .001$; relational aggression, $F(1, 5069) = 8.96, d = .08, p < .01$; deviant peers, $F(1, 5052) = 8.47, d = .08, p < .01$; parental support for aggression, $F(1, 5044) = 88.08, d = .27, p < .001$; and revenge goals, $F(1, 5055) = 23.25, d = .14, p < .001$, although the magnitudes of these effects were again small. Unlike Wave 1, boys were exposed to lower levels of relational victimization than girls at Wave 2, $F(1, 5066) = 11.13, d = -.09, p < .01$.

Analyses of variance found that level of relational victimization, physical and relational aggression, parental support for aggression, and peer deviancy differed in the fall and spring, although the effect sizes were small. When compared with scores in the fall, scores of relational victimization in the spring declined ($F[1, 4900] = 6.91, d = -.05$,

$p < .01$). In contrast, levels of physical aggression ($F [1, 4900] = 362.25, d = .21, p < .001$), relational aggression ($F [1, 4903] = 216.63, d = .17, p < .001$), peer deviancy ($F [1, 4903] = 85.76, d = .12, p < .001$), parental support for aggression ($F [1, 4855] = 138.84, d = .15, p < .001$) and revenge goals ($F [1, 4888] = 47.82, d = .09, p < .001$) increased from fall to spring. Mean levels of exposure to overt victimization did not differ across waves. Gender significantly moderated the effects of time on changes in relational victimization and relational aggression, such that the reduction in relational victimization was greater for boys ($F [1, 4899] = 9.06, p < .01$), and the increase in relational aggression was greater for girls ($F [1, 4902] = 8.53, p < .01$).

Table 3.

<i>Means and Standard Deviations for Each Scale by Gender</i>				
Scale	Boys <i>M (SD)</i>		Girls <i>M (SD)</i>	
	Fall	Spring	Fall	Spring
Overt Victimization*	0.60 (0.44)	0.59 (0.46)	0.47 (0.40)	0.47 (0.40)
Relational Victimization*	0.46 (0.42)	0.42 (0.43)	0.48 (0.41)	0.47 (0.41)
Physical Aggression*	0.45 (0.38)	0.52 (0.41)	0.32 (0.33)	0.41 (0.38)
Relational Aggression*	0.41 (0.36)	0.46 (0.38)	0.35 (0.33)	0.43 (0.38)
Peer Deviancy	0.29 (0.41)	0.33 (0.46)	0.24 (0.36)	0.30 (0.40)
Parental Support for Aggression	0.27 (0.27)	0.31 (0.28)	0.21 (0.24)	0.24 (0.25)
Revenge Goals *	0.63 (0.56)	0.67 (0.56)	0.54 (0.54)	0.60 (0.54)

Note: Asterisk indicates mean values of log transformations.

Table 4 reports the correlations among all scales used in this study. All were significant at $p < .001$. Correlations that are large in size, as defined by the Pearson's correlation coefficient being greater than or equal to .50 (Cohen, 1988), are presented in italicized print. At Wave 1, overt victimization and relational victimization were highly correlated with one another, $r = .69, p < .001$. The associations between both overt and

relational victimization and revenge goals were low, $r = .18, p < .001$; and $r = .11, p < .001$, respectively. Physical and relational aggression were highly correlated, $r = .70, p < .001$, and both were moderately correlated with revenge goals, $r = .34, p < .001$; and $r = .34, p < .001$, respectively. Similar patterns emerged at Wave 2 (See Table 4).

Four variables demonstrated stability over time. These included overt victimization ($r = .57, p < .001$), relational victimization ($r = .55, p < .001$), physical aggression ($r = .61, p < .001$), and relational aggression ($r = .57, p < .001$). In contrast, revenge goals at Wave 1 were only modestly related to revenge goals at Wave 2, $r = .37, p < .001$.

Victimization as a Predictor of Revenge Goals

Cross Sectional Findings

Two separate hierarchical linear regression analyses were conducted using Wave 1 and Wave 2 data to examine the main effects of overt victimization and relational victimization on revenge goals. Three-step models were used to test this hypothesis. For all models, the first step included the control variables: gender, and dummy-coded variables for site and intervention condition. Overt victimization was added at Step 2, and relational victimization was added at Step 3. For Wave 1 data, adding overt victimization at Step 2 accounted for a significant portion of variance in revenge goals above and beyond the control variables ($R^2_{Inc} = .025, p < .001$), but adding relational victimization at Step 3 did not account for any additional variance ($R^2_{Inc} = -.003, p < .05$). A second regression model using Wave 1 data was analyzed in which relational victimization was

Table 4.

Intercorrelations among All Variables

	Wave 1							Wave 2						
Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>Wave 1</i>														
1. Overt Victimization	1.00	--	--	--	--	--	--	--	--	--	--	--	--	--
2. Relational Victimization	.69	1.00	--	--	--	--	--	--	--	--	--	--	--	--
3. Physical Aggression	.52	.31	1.00	--	--	--	--	--	--	--	--	--	--	--
4. Relational Aggression	.46	.38	<i>.70</i>	1.00	--	--	--	--	--	--	--	--	--	--
5. Parental Support for Aggression	.21	.11	.41	.35	1.00	--	--	--	--	--	--	--	--	--
6. Peer Deviancy	.31	.25	.41	.40	.30	1.00	--	--	--	--	--	--	--	--
7. Revenge Goals	.18	.11	.36	.34	.37	.23	1.00	--	--	--	--	--	--	--
<i>Wave 2</i>														
8. Overt Victimization	.57	.44	.35	.30	.17	.22	.13	1.00	--	--	--	--	--	--
9. Relational Victimization	.45	.55	.18	.23	.07	.18	.06	.66	1.00	--	--	--	--	--
10. Physical Aggression	.38	.21	<i>.61</i>	<i>.51</i>	.35	.32	.29	.52	.26	1.00	--	--	--	--
11. Relational Aggression	.34	.26	.47	.57	.28	.29	.26	.44	.35	<i>.71</i>	1.00	--	--	--
12. Parental Support for Aggression	.21	.11	.34	.28	.49	.25	.28	.21	.08	.45	.35	1.00	--	--
13. Peer Deviancy	.25	.19	.35	.32	.25	.42	.20	.31	.21	.46	.41	.33	1.00	--
14. Revenge Goals	.16	.10	.28	.28	.30	.19	.37	.17	.09	.40	.37	.35	.25	1.00

Note. All correlations are significant at $p < .001$. Correlations at $\geq .50$ are in italics.

entered at Step 2, and overt victimization was entered at Step 3 to examine if the effect of overt victimization on revenge goals would persist if relational victimization was entered into the model first. At Step 2, relational victimization accounted for a significant portion of variance in revenge goals above and beyond the control variables, ($R^2_{Inc} = .012, p < .001$). Adding overt victimization at Step 3 contributed to a significant portion of variance in revenge goals above and beyond the control variables and relational victimization ($R^2_{Inc} = .013, p < .001$), and relational victimization no longer accounted for a significant portion of the variance at Step 3 ($B = .000, p > .05$; see Table 5).

A similar pattern of results was found using Wave 2 data, replicating the finding that relational victimization did not account for any additional variance above and beyond control variables and overt victimization (see Table 6). In light of these findings, and in conjunction with the robust correlation between overt victimization and relational victimization, additional hypotheses regarding the effects of relational victimization on revenge goals were not tested. As such, the focus of the present study shifted to determine the moderating effects of gender, physical aggression, parental support for aggression, and peer deviancy on the relation between overt victimization and revenge goals.

Longitudinal Findings

Parallel to the cross-sectional analyses discussed previously, a hierarchical regression model was run to examine the main effects of overt victimization and relational victimization at Wave 1 on subsequent changes in revenge goals at Wave 2.

Table 5.

Summary of Cross Sectional Hierarchical Multiple Regression Analyses of the Effects of Relational Victimization and Overt Victimization on Revenge Goals at Wave 1

Step	Variable Entered	R ²	R ² _{Inc}	B ^a	sr ^{2b}
<i>Overt Victimization Entered First (at Step 2)</i>					
1		.026***	.026***		
	Gender is Male			.088***	.006***
	Universal Condition			.006	.000
	Targeted Condition			.027	.000
	Combined Condition			.021	.000
	Site 1			-.066**	.004**
	Site 2			.035**	.001**
	Site 3			.103***	.013***
2		.051***	.025***		
	Overt Victimization			.208***	.025***
3		.051***	.000		
	Relational Victimization			-.003	.000
<i>Relational Victimization Entered First (at Step 2)</i>					
1		.026***	.026***		
	Gender is Male			.088***	.006***
	Universal Condition			.006	.000
	Targeted Condition			.027	.000
	Combined Condition			.021	.000
	Site 1			-.066**	.004**
	Site 2			.035**	.001**
	Site 3			.103***	.013***
2		.038***	.012***		
	Relational Victimization			.147***	.012***
3		.051***	.013***		
	Overt Victimization			.210***	.013***

^a Unstandardized regression weights for the step at which they were entered. ^b Semi-partial correlations squared for the step at which they were entered.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6.

Summary of Cross Sectional Hierarchical Multiple Regression Analyses of the Effects of Relational Victimization and Overt Victimization on Revenge Goals at Wave 2

Step	Variable Entered	R ²	R ² _{Inc}	B ^a	sr ^{2b}
<i>Wave 1</i>					
1		.023***	.023***		
	Gender is Male			.072***	.004***
	Universal Condition			.058**	.001**
	Targeted Condition			.043*	.001*
	Combined Condition			.063**	.002**
	Site 1			-.041*	.000*
	Site 2			.050***	.003***
	Site 3			.081***	.008***
2		.046***	.023***		
	Overt Victimization			.194***	.023***
3		.046***	.000		
	Relational Victimization			-.022	.000
<i>Wave 2</i>					
1		.023***	.023***		
	Gender is Male			.072***	.004***
	Universal Condition			.058**	.001**
	Targeted Condition			.043*	.001*
	Combined Condition			.063**	.002**
	Site 1			-.041*	.000*
	Site 2			.050***	.003***
	Site 3			.081***	.008***
2		.031***	.009***		
	Relational Victimization			.122***	.008***
3		.046***	.014***		
	Overt Victimization			.209***	.014***

^a Unstandardized regression weights for the step at which they were entered. ^b Semi-partial correlations squared for the step at which they were entered.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Step 1 included the control variables described in the cross-sectional model and revenge goals at Wave 1; overt victimization was added at Step 2, and relational victimization was added at Step 3. The dependent variable was revenge goals at Wave 2. Consistent

with the cross-sectional results, adding relational victimization at Step 3 did not contribute to additional variance in revenge goals above and beyond the control variables and overt victimization ($R^2 \text{ Change} = .000, p > .05$). Hence, longitudinal hypotheses related to the relation between relational victimization and revenge goals were not tested; only hypotheses regarding the relation between overt victimization and revenge goals and the associated predictions regarding moderators were explored.

Gender Effects

Cross Sectional Findings

To examine gender effects, separate hierarchical regression models were run with Wave 1 and Wave 2 data in which dummy-coded variables for site and intervention condition were entered at Step 1, overt victimization and gender were entered at Step 2, and the product term of overt victimization by gender was entered at Step 3. The dependent variable was defined as either Wave 1 or Wave 2 revenge goals. It was hypothesized that the relation between overt victimization and revenge goals would be stronger for boys than for girls. At Wave 1, significant, but small, direct main effects for overt victimization ($B = .208, p < .001, sr^2 = .025$), and gender ($B = .062, p < .001, sr^2 = .003$) were detected, with boys reporting higher levels of revenge goals. Adding the gender interaction term at Step 3 did not contribute additional variance above that of the control variables and the main effects ($R^2 \text{ Change} = .000, p > .05$), indicating that the relation between overt victimization and revenge goals did not depend on gender. A similar pattern of findings was detected at Wave 2; significant, but small, direct main effects for overt victimization ($B = .195, p < .001, sr^2 = .023$), and gender ($B = .048, p <$

.01, $sr^2 = .002$) were found. However, adding the interaction term at Step 3 did not account for additional variance above that of the control variables and the main effects ($R^2 \text{ Change} = .000, p > .05$).

Longitudinal Findings

A similar hierarchical multiple regression model was run using longitudinal data to determine whether the relation between overt victimization at Wave 1 and revenge goals at Wave 2 was dependent on gender. In addition to the control variables identified previously for the cross-sectional models, revenge goals at Wave 1 were entered at Step 1. Results found a significant main effect for overt victimization ($B = .108, p < .001, sr^2 = .005$), but gender was not related to changes in revenge goals over time. Consistent with the cross-sectional findings, adding the gender interaction at Step 3 did not explain additional variance above that which was accounted for by the control variables and the main effects ($R^2 \text{ Change} = .000, p > .05$), indicating that there are no gender differences in the longitudinal relation between overt victimization and revenge goals.

Moderators

Nine separate hierarchical regression analyses were conducted to examine the moderating effects of physical aggression, parental support for aggression, and peer deviancy on the relation between overt victimization and revenge goals. Six models examined cross-sectional relations, and three models examined longitudinal relations. All models included three steps: Control variables including three dummy-coded variables representing intervention status, three dummy-coded variables representing site, and gender were entered at Step 1. Wave 1 levels of revenge goals were included at Step 1 as

a control variable for the longitudinal analyses. Mean-centered scores on overt victimization and the moderator variable were entered at Step 2; and the product term of the centered values of overt victimization and the moderator variable were entered at Step 3. For the cross-sectional models, the dependent variable was defined as revenge goals at either Wave 1 or Wave 2. For the longitudinal models, the dependent variable was defined as revenge goals at Wave 2.

Physical Aggression as a Moderator

Cross sectional findings. Results of the regression models examining the relation between overt victimization, physical aggression, and revenge goals at Waves 1 and 2 are summarized in Table 7. For both waves, it was hypothesized that the relation between overt victimization and revenge goals would be strongest for youth reporting higher frequencies of physical aggression. A main effect for physical aggression on revenge goals was detected at Wave 1 ($B = .542, p < .001, sr^2 = .008$) and Wave 2 ($B = .568, p < .001, sr^2 = .120$). A small, main effect for overt victimization was detected at Wave 2, but contrary to the hypothesis, overt victimization and revenge goals were inversely related ($B = -.063, p < .01, sr^2 = .002$).

The interaction of overt victimization and physical aggression at Wave 1 was small, but significant ($R^2_{Inc} = .001, p < .01$). Follow-up analyses indicated that the relation between victimization and revenge goals was not significant for students with low and moderate levels of physical aggression. This relation was significant and negative for students at the highest quartile for physical aggression ($B = -.067, p < .05$). However, the effect size was small, accounting for only 0.2% of the variance (see Figure 2).

Table 7.

Summary of Cross Sectional Hierarchical Multiple Regression Analyses of the Moderating Effects of Physical Aggression on the Relation between Overt Victimization and Revenge Goals at Waves 1 and 2

Step	Variable Entered	R ²	R ² _{Inc}	B ^a	st ^{2b}
<i>Wave 1</i>					
1		.026***	.026***		
	Gender is Male			.088***	.010***
	Universal Condition			.006	.000
	Targeted Condition			.027	.000
	Combined Condition			.021	.000
	Site 1			-.006***	.005***
	Site 2			.035**	.002**
	Site 3			.103***	.010***
2		.139***	.114***		
	Overt Victimization			-.019	.000
	Physical Aggression			.542***	.090***
3		.140**	.001**		
	Overt Victimization by Physical Aggression			-.112*	.002*
<i>Wave 2</i>					
1		.023***	.023***		
	Gender is Male			.073***	.005***
	Universal Condition			.059**	.002**
	Targeted Condition			.043*	.001*
	Combined Condition			.064**	.002**
	Site 1			-.041**	.002**
	Site 2			.050***	.003***
	Site 3			.081***	.010***
2		.168***	.168***		
	Overt Victimization			-.063**	.002**
	Physical Aggression			.568***	.120***
3		.169***	.001		
	Overt Victimization by Physical Aggression			-.064	.008

^a Unstandardized regression weights for the step at which they were entered. ^b Semi partial correlations for the step at which they were entered.

* $p < .05$. ** $p < .01$. *** $p < .001$.

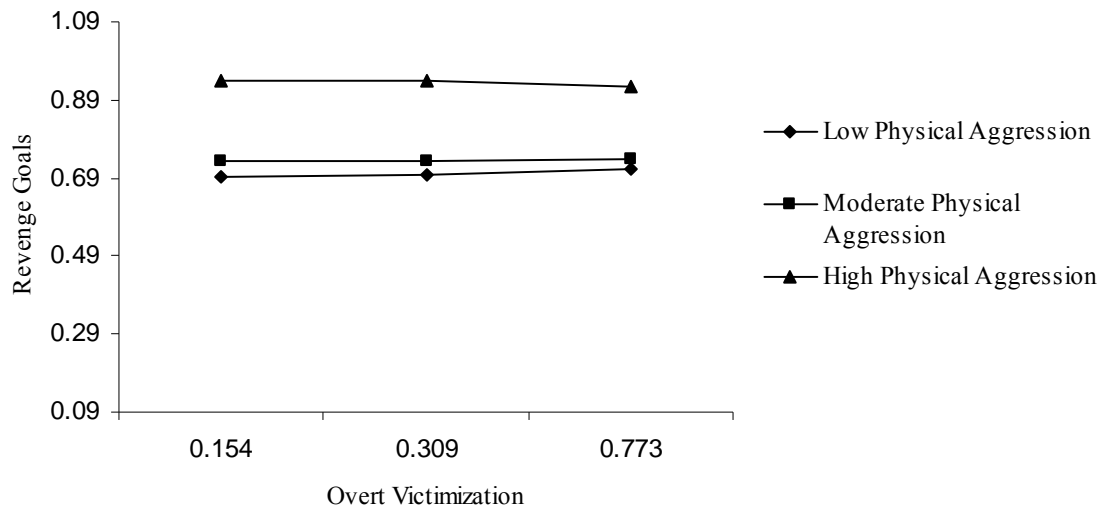


Figure 2. Revenge goals at Wave 1 as a function of the interaction between overt victimization and physical aggression at Wave 1. Low values of overt victimization and physical aggression represent those variables at the 25th percentile. High values of overt victimization and physical aggression represent those variables at the 75th percentile. Moderate values of overt victimization and physical aggression represent those variables at the midpoint.

Longitudinal Findings. Results of the regression model examining the relation between Wave 1 levels of overt victimization and physical aggression, and revenge goals at Wave 2 are reported in Table 8. It was hypothesized that the relation between overt victimization and subsequent changes in revenge goals would be strongest for students with high levels of physical aggression. The interaction of overt victimization and physical aggression on changes in revenge goals was significant, but small ($R^2_{inc} = .002$; $p < .01$). Post-hoc exploration of the regression weights for the interaction indicated that the relation was significant for students with low ($B = .056$, $p < .05$, $sr^2 = .001$) or moderate ($B = .075$, $p < .01$, $sr^2 = .001$) levels of physical aggression. However, the effect sizes were small for both findings. Contrary to the hypothesis, the slope of the simple

regression line was not significant for students with high levels of physical aggression (see Figure 3).

Table 8.

Summary of Hierarchical Multiple Regression Analysis of the Moderating Effects of Physical Aggression at Wave 1 on the Relation between Overt Victimization at Wave 1 and Revenge Goals at Wave 2

Step	Variable Entered	R ²	R ² Change	B ^a	sr ^{2b}
1		.149***	.149***		
	Universal Condition			.059**	.001**
	Targeted Condition			.033	.000
	Combined Condition			.058**	.001**
	Site 1			-.018	.000
	Site 2			.038**	.002**
	Site 3			.045***	.002***
	Gender is Male			.039**	.001**
	Revenge Goals at Wave 1			.361***	.126***
2		.171***	.023***		
	Overt Victimization			.014	.000
	Physical Aggression			.247***	.016***
3		.173**	.002**		
	Overt Victimization by Physical Aggression			-.138**	.002**

^a Unstandardized regression weights for the step at which they were entered. ^b Semi-partial correlations for the step at which they were entered

* p < .05. ** p < .01. *** p < .001.

Parental Support for Aggression as a Moderator

Cross sectional findings. Results of the regression models examining the relation between overt victimization, parental support for aggression, and revenge goals at Waves 1 and 2 are summarized in Table 9. For Waves 1 and 2, it was hypothesized that the relation between overt victimization and revenge goals would be strongest among students who perceived their parents as supportive of aggression. Results at both waves

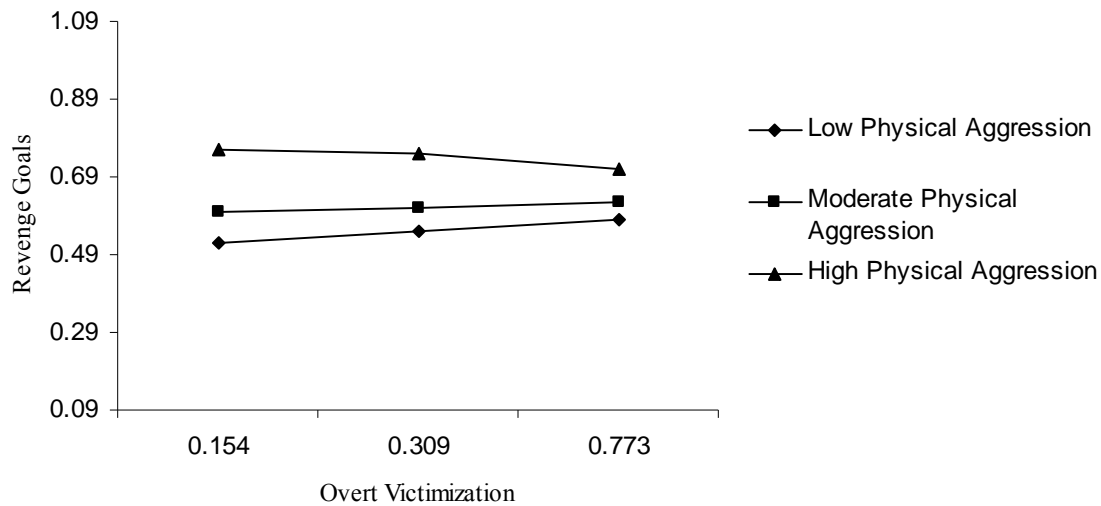


Figure 3. Revenge goals at Wave 2 as a function of the interaction between overt victimization and physical aggression at Wave 1. Low values of overt victimization and physical aggression represent those variables at the 25th percentile. High values of overt victimization and physical aggression represent those variables at the 75th percentile. Moderate values of overt victimization and physical aggression represent those variables at the midpoint.

detected significant main effects on revenge goals for overt victimization (Wave 1: $B = .126, p = .001, sr^2 = .009$; Wave 2: $B = .124, p < .001, sr^2 = .009$), and parental support for aggression (Wave 1: $B = .739, p < .001, sr^2 = .109$; Wave 2: $B = .651, p < .001, sr^2 = .094$). As reflected in the values of the squared semi-partial correlations, the effect sizes for overt victimization were small, accounting for approximately 0.9% of the explained variance in revenge goals. The interaction of overt victimization and parental support for aggression on revenge goals was not significant at either wave.

Longitudinal Findings. Results for the longitudinal regression models are presented in Table 10. For the longitudinal model, the hypothesis that the relation between overt victimization and changes in revenge goals would be greatest for students who perceived their parents as supportive of aggression was not supported.

Table 9.

Summary of Cross Sectional Hierarchical Multiple Regression Analyses of the Moderating Effects of Parental Support for Aggression on the Relation between Overt Victimization and Revenge Goals at Waves 1 and 2

Step	Variable Entered	R ²	R ² Change	B ^a	sr ²
<i>Wave 1</i>					
1		.026***	.026***		
	Gender is Male			.086***	.006***
	Universal Condition			.006	.000
	Targeted Condition			.028	.000
	Combined Condition			.021	.000
	Site 1			-.068***	.004***
	Site 2			.035**	.001**
	Site 3			.105***	.013***
2		.160***	.134***		
	Overt Victimization			.126***	.009***
	Parental Support for Aggression			.739***	.108***
3		.160***	.000		
	Overt Victimization by Parental Support for Aggression			-.048	.000
<i>Wave 2</i>					
1		.023***	.023***		
	Gender is Male			.073***	.004***
	Universal Condition			.059**	.001**
	Targeted Condition			.042*	.000*
	Combined Condition			.065**	.002**
	Site 1			-.041**	.002**
	Site 2			.048***	.002***
	Site 3			.081***	.008***
2		.139***	.116***		
	Overt Victimization			.124***	.009***
	Parental Support for Aggression			.651***	.093***
3		.140***	.001		
	Overt Victimization by Parental Support for Aggression			-.108	.000

^a Unstandardized regression weights for the step at which they were entered. ^b Semi-partial correlations for the step at which they were entered.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 10.

Summary of Hierarchical Multiple Regression Analysis of the Moderating Effects of Parental Support for Aggression at Wave 1 on the Relation between Overt Victimization at Wave 1 and Revenge Goals at Wave 2

Step	Variable Entered	R ²	R ² Change	B ^a	sr ^{2b}
1		.148***	.148***		
	Universal Condition			.059**	.001**
	Targeted Condition			.033	.000
	Combined Condition			.061**	.001**
	Site 1			-.017	.000
	Site 2			.037**	.001**
	Site 3			.044***	.002***
	Gender is Male			.038**	.001**
	Revenge Goals at Wave 1			.361***	.125***
2		.179***	.030***		
	Overt Victimization			.075***	.003***
	Parental Support for Aggression			.373***	.024***
3		.179***	.000		
	Overt Victimization by Parental Support for Aggression			-.112	.000

^a Unstandardized regression weights for the step at which they were entered. ^b Semi-partial correlations for the step at which they were entered.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Peer Deviancy as a Moderator

Cross sectional findings. Results of the regression models examining the relation between overt victimization, peer deviancy, and revenge goals at Waves 1 and 2 are summarized in Table 11. For both waves, it was hypothesized that the relation between overt victimization and revenge goals would be strongest for students with high scores of peer deviancy. Significant main effects were found at Waves 1 and 2 for overt victimization (Wave 1: $B = .134$, $p < .001$, $sr^2 = .010$; Wave 2: $B = .111$, $p < .001$, $sr^2 = .010$), and peer deviancy (Wave 1: $B = .269$, $p < .001$, $sr^2 = .030$; Wave 2: $B = .276$,

Table 11.

Summary of Hierarchical Multiple Regression Analyses of the Moderating Effects of Peer Deviancy on the Relation between Overt Victimization and Revenge Goals at Waves 1 and 2

Step	Variable Entered	R ²	R ² Change	B ^a	sr ²
<i>Wave 1</i>					
1		.026***	.026***		
	Gender is Male			.086***	.006***
	Universal Condition			.006	.000
	Targeted Condition			.025	.000
	Combined Condition			.021	.000
	Site 1			-.071***	.005***
	Site 2			.036**	.002**
	Site 3			.105***	.010***
2		.083***	.057***		
	Overt Victimization			.134***	.010***
	Peer Deviancy			.269***	.030***
3					
	Overt Victimization by Peer Deviancy	.083	.000	-.043	.000
<i>Wave 2</i>					
1		.023***	.023***		
	Gender is Male			.073***	.005***
	Universal Condition			.060**	.002**
	Targeted Condition			.044*	.001*
	Combined Condition			.067**	.005**
	Site 1			-.041**	.002**
	Site 2			.048**	.003**
	Site3			.082***	.010***
2		.087***	.064***		
	Overt Victimization			.111***	.010***
	Peer Deviancy			.276***	.040***
3		.089**	.002**		
	Overt Victimization by Peer Deviancy			-.121**	.002**

^a Unstandardized regression weights for the step at which they were entered. ^b Semi-partial correlations for the step at which they were entered.

* $p < .05$. ** $p < .01$. *** $p < .001$.

$p < .001$, $sr^2 = .040$). No significant interaction was detected at Wave 1; in contrast, at Wave 2, peer deviancy significantly moderated the relation between overt victimization and revenge goals ($R^2_{inc} = .002$, $p < .01$). The relation between overt victimization and revenge goals was strongest for students with low ($B = .155$, $p < .001$, $sr^2 = .008$) to moderate ($B = .117$, $p < .001$, $sr^2 = .007$) levels of peer deviancy, but it was not significant for students with high levels of peer deviancy (see Figure 4).

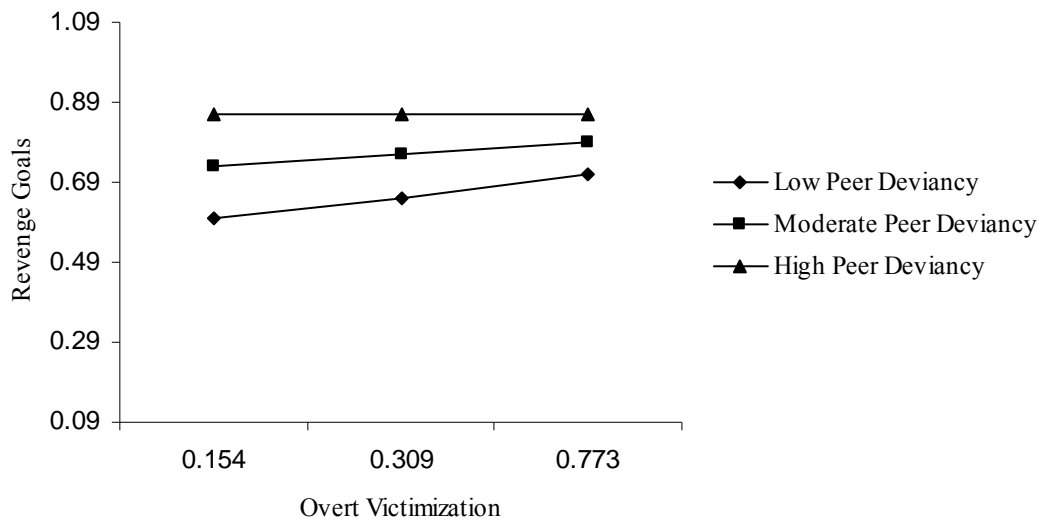


Figure 4. Revenge goals at Wave 2 as a function of the interaction between overt victimization and peer deviancy at Wave 2. Low values of overt victimization and peer deviancy represent those variables at the 25th percentile. High values of overt victimization and peer deviancy represent those variables at the 75th percentile. Moderate values of overt victimization and peer deviancy represent those variables at the midpoint.

Longitudinal Findings. Results of the regression model examining the relation between overt victimization and peer deviancy at Wave 1, and revenge goals at Wave 2 are summarized in Table 12. It was hypothesized that the relation between overt victimization and subsequent changes in revenge goals would be strongest among

students with high levels of peer deviancy. Similar to the cross-sectional findings, significant main effects were detected for overt victimization ($B = .071, p < .001, sr^2 = .002$) and peer deviancy ($B = .132, p < .001, sr^2 = .007$), although both variables accounted for less than 1% of the variance in revenge goals. The interaction of overt victimization and peer deviancy on subsequent revenge goals was significant ($R^2_{inc} = .003, p < .001$), although the effect size was small ($sr^2 = .003$). Contrary to the hypothesis, the relation between overt victimization and subsequent revenge goals was strongest for students with low ($B = .119, p < .001$) and moderate ($B = .119, p < .001$) levels of peer deviancy in comparison to students with high levels of peer deviancy ($B = .056, p < .01$; see Figure 5), although the effect sizes were small for all subgroups ($sr^2 < .010$ for all subgroups).

Table 12.

Summary of Hierarchical Multiple Regression Analysis of the Moderating Effects of Peer Deviancy on the Relation between Overt Victimization and Revenge Goals at Wave 2

Step	Variable Entered	R ²	R ² Change	B ^a	sr ^{2b}
1		.149***	.149***		
	Universal Condition			.060**	.001**
	Targeted Condition			.032	.000
	Combined Condition			.062**	.002**
	Site 1			-.018	.000
	Site 2			.037**	.038**
	Site 3			.044**	.001**
	Gender is Male			.038**	.001**
	Revenge Goals at Wave 1			.362***	.126***
2		.162***	.013***		
	Overt Victimization			.071***	.002***
	Peer Deviancy			.132***	.007***
3		.165**	.003**		
	Overt Victimization by Peer Deviancy			-.158**	.003**

^a Unstandardized regression weights for the step at which they were entered. ^b Semi-partial correlations for the step at which they were entered.

* $p < .05$. ** $p < .01$. *** $p < .001$.

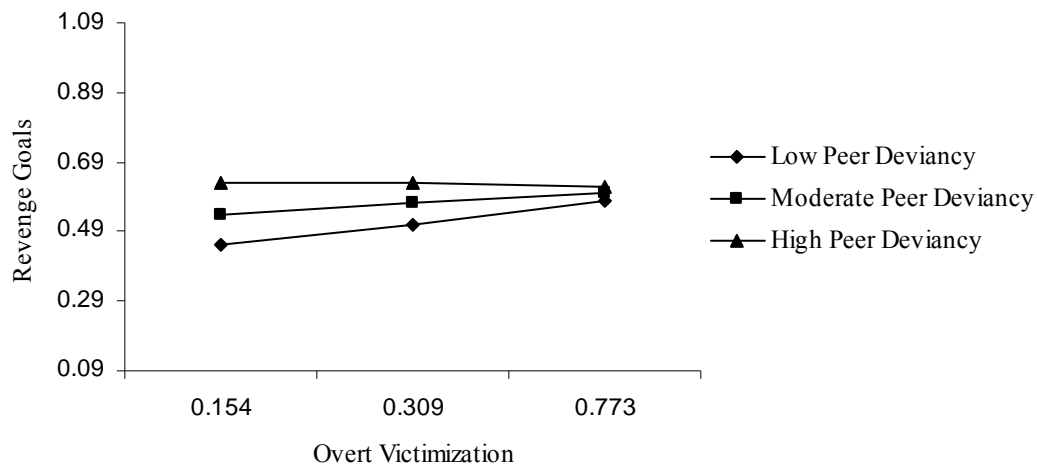


Figure 5. Revenge goals at Wave 2 as a function of the interaction between overt victimization and peer deviancy at Wave 1. Low values of overt victimization and peer deviancy represent those variables at the 25th percentile. High values of overt victimization and peer deviancy represent those variables at the 75th percentile. Moderate values of overt victimization and peer deviancy represent those variables at the midpoint.

DISCUSSION

The primary purpose of this study was to: (a) examine the effects of peer victimization on revenge goals, and (b) to explore the mechanisms underlying the development of revenge goals by examining the moderating effects of overt aggression, relational aggression, parental support for aggression, and peer deviancy. Although the study was designed to determine the unique effects of overt victimization and relational victimization on revenge goals, only hypotheses related to overt victimization were tested for two primary reasons: (a) overt and relational victimization were highly correlated, and (b) relational victimization did not predict revenge goals when overt victimization was also included in the model. In addition, the moderating effects of relational aggression were not tested due to its high correlation with physical aggression. Using guidelines delineated by Suchman, McMahon, Slade, and Luthar (2005), relational victimization was excluded from subsequent analyses in order to limit interpretation error. As such, the moderating effects of relational aggression, parental support for aggression, and peer deviancy on the relation between relational victimization and revenge goals were not tested.

Extant studies have differed in their measurement of peer victimization. The three identified studies that have examined the relation between peer victimization and revenge goals have not differentiated between different forms of victimization, but instead have used a composite score for victimization that included physical, verbal, and relational forms of bullying (Kochenderfer-Ladd, 2004; Mah, 2001). However, experts in peer victimization argue that physical, verbal, and relational victimization are constructs that

are theoretically and statistically distinct. These experts have criticized extant literature for failing to differentiate between different forms of peer aggression (Crick & Bigbee, 1998; Crick & Grotpeter, 1996; Kochenderfer & Ladd, 1996; Perry et. al., 1988). The present study aimed to address this limitation by examining the effects of overt victimization and relational victimization on revenge goals separately. However, the high correlation between overt and relational victimization in the present study made it difficult to test these constructs separately and did not support the evidence that they are distinct constructs.

Significant changes from the fall to spring semester were detected for the majority of variables examined in the present study, with the exception of overt victimization, which remained stable. Unlike overt victimization, relational victimization slightly decreased between the fall and spring. Existing studies that have examined victimization during the sixth grade year have generally found lower levels of victimization in the spring than the fall, although most of these studies have not differentiated between relational and overt victimization (e.g., Pelligrini et al, 1999). Additional longitudinal studies are needed to clarify trends in the frequency of all forms of victimization and how they change over the course of the school year.

In the present study, physical aggression and revenge goals increased from the fall to the spring, whereas relational aggression decreased. Few studies have examined how levels of physical and relational aggression change over the sixth grade year. Although researchers have reported that overall aggression peaks in the sixth grade (e.g., Fite et al., 2008), it is unclear from the literature whether levels peak in the spring or fall. Consistent

with the findings of the present study, Pelligrini and Long (2003) reported that relational aggression declined from the start to the end of sixth grade, and continued to decline during the seventh grade. Studies examining trajectories of aggression over early to middle childhood typically report that physical aggression decreases with age (Tremblay et al., 1996), which is in contrast to the increase in physical aggression over the school year among the students in the current sample. Similarly, revenge goals increased between the fall and spring semesters, which contrasts with findings reported by Kochenderfer-Ladd (2004), who found stable levels of revenge goals in a sample of elementary school students. The increase in physical aggression and revenge goals in the current sample may be a reflection of volatile peer dynamics among sixth grade students as they transition from elementary to middle school (Pelligrini & Long, 2003). It is possible that sixth graders use physical aggression to safeguard themselves against larger, older bullies, or to maintain/create a tough image for themselves to prevent future attacks by peers (Camou, 2006). It is also possible that these findings reflect seasonal variability in school-based behavior; research has suggested that it is not uncommon for behavior problems and peer aggression to escalate over the course of a school year due to decreased excitement about school and stresses associated with daily peer interactions (Asher & Coie, 1990; Gest et al., 2005).

Significant gender effects were detected for the majority of variables examined in the present study. In comparison to girls, boys consistently reported higher levels of aggression-related constructs, including physical and relational aggression, peer deviancy, and parental support for aggression. The findings pertaining to peer deviancy

and parental support for aggression are consistent with the literature. However, the finding that boys reported higher levels of relational aggression than girls was unexpected. Researchers generally report that girls engage in higher levels of relational aggression than boys, and boys engage in higher levels of overt aggression than do girls (Coie & Dodge, 1998; Crick et al., 1999; Underwood, 2003). However, it has been documented that boys engage in more overall bullying behavior than girls (Dueholm, 1999). The findings of the present study suggest that boys engage in all forms of aggression more frequently than girls, but when girls are aggressive they are more likely to target their victim's relationships rather than their physical wellbeing.

In comparison to girls, boys reported higher levels of overt victimization in both the fall and spring, which is consistent with extant literature (e.g., Crick & Bigbee, 1998; Olweus, 1993). In the fall, boys and girls reported similar levels of relational victimization, but by the spring girls had higher levels of relational victimization than boys. Results reported in the literature regarding gender differences and victimization are mixed; some studies have found that girls experience relational victimization more frequently than boys (Crick & Bigbee, 1998; Olweus, 1993), whereas others have failed to detect gender differences (Paquette & Underwood, 1999; Crick & Grotpeter, 1995). The current study supports the growing number of studies that have suggested that relational victimization is a difficult social problem experienced by both boys and girls, but the trajectory of this form of aggression may differ by gender. Contrary to the hypothesis, gender did not moderate the relation between overt victimization and revenge

goals. This suggests that overt victimization is a difficult situation that is associated with revenge goals for all students.

It was predicted that a significant positive relation between overt victimization and revenge goals would be detected, and that the relation would be stronger among youth with higher levels of physical aggression. Significant main effects of overt victimization and physical aggression on revenge goals were detected in both the cross-sectional and longitudinal models. These effects are consistent with extant cross-sectional studies that have established a relation between peer victimization and revenge goals (Coleman & Byrd, 2003; Kochenderfer-Ladd, 2004; Mah, 2001), and physical aggression and revenge goals (Lochman et al., 1993). Although a significant victimization by physical aggression interaction effect was found at Wave 1 and in the longitudinal model, the results were in the opposite direction of what was predicted. Whereas overt victimization was not related to revenge goals for students with low and moderate levels of physical aggression, victimization was inversely related to revenge goals for highly aggressive students. Thus, although highly aggressive students, as a group, had the highest ratings of revenge goals, among aggressive students, revenge goals were lowest for those students who were also highly victimized. Longitudinal analyses found a different interaction pattern. Results demonstrated that for students with high levels of physical aggression, overt victimization did not significantly predict changes in revenge goals. However, increases in revenge goals for children with low or moderate levels of physical aggression were greater as the frequency of victimization increased.

It is unclear why the relation between peer victimization and revenge goals attenuated for highly aggressive students in the cross-sectional model, and became insignificant in the longitudinal model. Although these results are similar to findings reported by Troop-Gordon and Asher (2005), who found that passive-victims adopted revenge goals more quickly than aggressive-victims when initial prosocial problem-solving techniques failed, the results are inconsistent with the aggressive-victim literature. It is possible that by the sixth grade, the social cognitive processes of highly aggressive students are already primed to support aggressive social goals, such that experiences of victimization have less of an impact on their goals than they do on less aggressive youth. However, additional research is needed to confirm this explanation.

Significant cross-sectional and longitudinal effects of parental support for aggression on revenge goals were found. As predicted, parental support for aggression and revenge goals were positively related. For all models that included overt victimization and parental support for aggression as predictor variables, parental support for aggression accounted for more explained variance in revenge goals than did overt victimization. This supports findings reported by Orpinas and colleagues (1999) that emphasized the importance of parental support for aggression in comparison to other parenting variables (e.g., warmth, monitoring) in predicting youth aggression. These findings also lend support to research that has suggested that parental attitudes are transmitted to their children through coaching or other socializing mechanisms (Kliewer et al., 2006). Contrary to the hypothesis, parental support for aggression did not moderate the relation between overt victimization and revenge goals at Wave 1, Wave 2, or over

time. For this sample, regardless of how frequently students were victimized, the degree to which they rated revenge goals was influenced by their parents' support of aggression.

Significant cross-sectional main effects were detected for peer deviance, accounting for a small portion of explained variance in revenge goals. Longitudinal analyses also found that peer deviance at Wave 1 predicted revenge goals at Wave 2. Although previous studies have not examined the impact of peer deviancy on revenge goals explicitly, a wealth of research has demonstrated a positive relation between exposure to deviant peers, level of aggression, and other problem behaviors (Boxer et al., 2005; Dishion, Andrews, & Crosby, 1995; Dishion, Spracklen, Andrews, & Patterson, 1996; Thornberry & Krohn, 1997).

Peer deviancy moderated the relation between overt victimization and revenge goals at Wave 2, and in the longitudinal model. At Wave 2, overt victimization was positively related to revenge goals, but this relation attenuated as peer deviancy increased such that it was no longer significant for students at the seventy-fifth percentile for peer deviancy. Similar patterns were found in the longitudinal model; the strength of the positive relation between overt victimization and revenge goals decreased as peer deviancy increased, and the relation was no longer significant for students at the highest quartile for peer deviancy. These findings contradicted the hypothesis that predicted the relation between overt victimization and revenge goals would strengthen as peer deviancy increased. Instead, peer deviancy had a significant impact on the development of revenge goals among youth who experienced low to moderate levels of overt victimization, but youth who were at the highest quartile for exposure to overt

victimization prioritized revenge goals, regardless of how deviant their peers were. These findings are contradictory to extant literature that has historically viewed peer deviancy as a risk factor for a host of problem behaviors (Henry, Tolan, & Gorman-Smith, 2001; Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998).

One potential explanation lies in empirical findings that peer deviancy has a stronger association with proactive aggression than reactive aggression (Vitaro, Gendreau, Tremblay & Oligny, 1998). Revenge goals, as defined by the current study, are a precursor to proactive aggression, since the respondent has set a goal to retaliate against a peer. The relation between peer deviancy and proactive aggression that has been reported in extant literature, in combination with the significant, positive main effects of peer deviancy on revenge goals found in the current study, suggests that the development of revenge goals for children with high levels of deviant peers is not influenced by victimization. It is possible that this subsection of youth would develop revenge goals regardless of their exposure to peer victimization, based on socialization processes that occur within their peer context (e.g., Dishion et al., 1996). In comparison to students with high levels of peer deviancy, students who have fewer deviant peers and experience different peer group dynamics may be more prone to develop revenge goals as they experience negative peer interactions such as overt victimization. Similarly, in comparison to students who rarely experience overt victimization, students who are frequently attacked by their peers may be more apt to develop aggressive cognitions in response to repeated negative social interactions, regardless of the deviance of their peer group.

Limitations and Directions for Future Research

The present study added to the existing literature by demonstrating that overt victimization significantly impacts revenge goals, and also affects increases in revenge goals over time. The present study also demonstrated the moderating effects of physical aggression and peer deviancy, both on the concurrent relation between overt victimization and revenge goals, and on this relation over time. Although this study has contributed to the psychological literature, it is important to discuss its limitations.

A fundamental limitation of the present study was its reliance on self-report data for all constructs measured. Child-focused research that relies solely on self-report data is often criticized for its accuracy. This is particularly true of studies that assess aggression or delinquent behavior, due to the fact that youth may under-report their engagement in these types of behaviors. As such, it may have been beneficial to have teachers and/or parents to report on the behaviors and social functioning of this study's participants (Kazdin, 2003). However, parents and teachers may have less knowledge of peer victimization, as peer aggression most frequently occurs in the absence of adult supervision (Espelage, Bosworth, & Simon, 2000). A commonly-used procedure for collecting data on peer victimization and adolescent social functioning is through peer nomination. This procedure involves classmates rating individuals on constructs such as reputation, physical and relational aggression, and physical and relational victimization. Crick and Bigbee (1998) conducted a study that collected information about peer victimization and psychosocial adjustment through self-report and peer nominations. The results found that victims of peer aggression had higher levels of maladjustment in

comparison to non-victims, regardless of whether their victimization status was determined by self- or peer-reports. These findings support the use of self-reported data to determine victimization status, and suggest that self-report may not be more biased than peer data. Nevertheless, input from parents, teachers, and peers would have strengthened the present study. Future studies should incorporate behavioral ratings from multiple sources.

Another methodological limitation of this study was that students responded to hypothetical peer problems. Unfortunately, whether the student had experienced a similar dilemma to the one presented, or the degree to which the student imagined being in the situation was not assessed. The fact that the situation was hypothetical raises the issue of formal (e.g., reflections) and functional (e.g., actual behaviors) self-evaluation (Ray & Cohen, 1997). It is unclear whether responses to hypothetical situations accurately reflect the way that an individual would respond during an actual event. Nevertheless, the use of hypothetical situations does offer insight into at least some of the decisions that students make as they contemplate peer problems.

Another methodological limitation of the current study involves the measurement of peer victimization, aggression and revenge goals. In this study, both peer victimization and aggression were measured in reference to the last 30 days, instead of in relation to a specific incidence of peer conflict. Further, revenge goals were assessed in relation to a benign peer conflict, such as wanting to use the computer at the same time as a peer, but not in relation to a specific peer victimization event. However, the premise of the study was to determine whether exposure to peer victimization affected the development of

revenge goals. The limited specificity of the assessment of victimization, aggression, and revenge goals may explain why peer victimization accounted for such a small portion of explained variance in revenge goals. It is probable that peer victimization elicits a stronger emotional response than does a benign peer situation, and this emotional response likely influences several cognitive steps associated with the development of social goals (Crick & Dodge, 1994; Kochenderfer-Ladd, 2004; Lazarus & Folkman, 1984). A more specific assessment that measured aggression and revenge goals in relation to a specific experience of peer victimization may have produced stronger effects.

A final limitation of the current study is that it employed students from four different geographical regions and 37 different schools. Although the diversity of the sample can be viewed as a positive in that it improves the generalizability of the results, the cultural differences at the state-level, and even the school-level may have impacted the findings of the present study. Henry and colleagues (2000) found that schools differ in the extent to which norms value aggression. It follows that based on both the ethnic composition of the schools, and the dominant values of the individual schools will influence the development of revenge goals in middle school students.

Despite these limitations, the present study has found pertinent information that will add to the literature. One of the greatest strengths of this study is its emphasis on the cognitive underpinnings of aggression. The majority of studies examining adolescent coping and aggression have focused exclusively on behavioral outcomes (Compass et al., 2001). However, “promising” violence prevention programs include a student-focused

component aimed at teaching students to attend to their internal states (emotional arousal, attribution of blame), social goals, and generation of alternatives before engaging in a behavioral strategy (Farrell & Camou, 2005). Hence, research that examines the cognitive processes associated with aggression is essential as the field moves forward in the development, revision, and evaluation of violence prevention programs. Furthermore, many studies have found a robust relation between revenge goals and aggression, and researchers postulate that the desire to seek revenge against perpetrators of peer aggression plays a role in school-related violent crime (Feder, 2007). The present study is an important first step in applying a longitudinal design in further understanding the relation between peer victimization and revenge.

As discussed previously, relatively few studies have examined revenge goals in youth, and even fewer have looked at the impact of victimization on revenge. Hence, little is known about the structure and function of revenge in adolescents. Before additional research examines how victimization and revenge are related, it may be necessary to gain some descriptive information about revenge, particularly how it develops over time. Troop-Gordon and Asher (2005) demonstrated that youth modify their social goals as the social situation they are in changes. They also found that children differ on how quickly they adopt revenge goals based on their social status. Troop-Gordon and Asher's (2005) study has provided interesting data regarding "state" characteristics of revenge. Future research should follow adolescents over time to determine the "trait" characteristics of revenge.

Implications for Intervention

The results of the present study have many implications for violence prevention programs. Namely, the findings lend support for implementing universal violence prevention programs in middle schools. This is particularly important given the findings that demonstrated that students who rate themselves as being mildly to moderately physically aggressive are more likely to endorse revenge goals the more they are victimized. These mildly to moderately physically aggressive students would typically be overlooked for inclusion in programs developed for students who are already exhibiting a high level of problem behavior (Wilson, Lipsey, & Derzon, 2003). However, based on the results of this study, these children are at-risk for developing cognitive processes related to aggression. Existing violence prevention programs, however, may not be effective for students with low to moderate levels of problem behaviors. Most violence prevention programs that have been classified as “promising” by the Center for Disease Control for reducing violence and other problem behaviors are effective for high-risk youth, but less effective for students with low levels of problem behavior (for review, see Wilson, Lipsey & Derzon, 2003). In fact, some programs have reported that problem behaviors increase for youth with low to moderate levels of problem behaviors prior to the intervention.

The importance of peer deviancy in the development of revenge goals also highlights the importance of implementing universal violence prevention programs to try to reduce the legitimacy of aggression as a socially-acceptable way to deal with peer problems. The finding that peer involvement in deviant behavior, not just their attitudes supporting aggression, suggests that violence prevention programs may need to include

additional components that extend beyond social problem solving and a focus on aggression. Research has shown that adolescence is a time for youth to rebel against authority. Further, adolescents who break rules become “trendsetters” when before they may have been rejected by their peers (Miller-Johnson et al., 2003). In order to maximize the likelihood that students will use prosocial strategies to deal with peer problems, changes must be made within the social climate that decreases the “appeal” of aggression (Camou, 2006; Prinstein & Cillessen, 2003).

The findings of the current study also highlight the role that parents have on the development of aggressive cognitions. Parental support for aggression was predictive of revenge goals at both waves of data, and also predicted change in revenge goals over time. Many researchers point to the importance of implementing interventions at multiple levels of the child’s social ecology to combat aggression and recognize the central role that parents play in the development of aggression (e.g., Farrell & Camou, 2005; Henggeler, 2001). Although most school-based violence prevention programs for middle school students focus on change at the individual level (Farrell & Camou, 2005; Wilson et al., 2003), those that do include a parent component most frequently target family management techniques such as effective monitoring, discipline, and communication (Dishion, Kavanaugh, Schneiger, Nelson, & Kaufman, 2002). The results of this study, in conjunction with the findings by Orpinas et al. (1999) suggest that information pertaining to the transmission of aggressive attitudes through modeling and coaching should be integrated into family-based interventions. For instance, parents should be reminded that their children emulate the way they handle social problems, and as such interventionists

may teach parents effective social problem solving skills. Interventions may also provide parents with ideas of effective, non-violent solutions to dealing with victimization, as well as challenge attitudes that support aggressive coping.

Conclusion

In conclusion, the findings of this study emphasize the influence that overt victimization has on revenge goals in sixth grade students, both concurrently, and over time. The study also found that this relation is partially moderated by physical aggression and peer deviancy. In addition, physical aggression, peer deviancy, and parental support for aggression directly impact revenge goals as well. Future research should continue to examine the development of revenge over time. Furthermore, additional research should focus on devising novel and creative ways to assess cognitive processes in children and adolescents. School-based violence prevention interventions should take into account the complex role that aggression plays in adolescent subculture, and move toward creating inclusive, supportive environments that promote the use of prosocial, non-violent coping strategies.

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